

Message

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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 3/15/2018 6:38:02 PM  
**To:** Thurman, Nelson [Thurman.Nelson@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]; Lennartz, Steven [Lennartz.Steven@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]; Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

## Ex. 5 Deliberative Process (DP)

**From:** Thurman, Nelson  
**Sent:** Thursday, March 15, 2018 2:35 PM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

## Ex. 5 Deliberative Process (DP)

**From:** Garber, Kristina  
**Sent:** Thursday, March 15, 2018 1:58 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Thurman, Nelson <Thurman.Nelson@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

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**From:** Garber, Kristina  
**Sent:** Thursday, March 15, 2018 1:49 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Thurman, Nelson <Thurman.Nelson@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

## Ex. 5 Deliberative Process (DP)

**From:** Peck, Charles  
**Sent:** Thursday, March 15, 2018 1:32 PM  
**To:** Lennartz, Steven <Lennartz.Steven@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Thurman, Nelson <Thurman.Nelson@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

# Ex. 5 Deliberative Process (DP)

**From:** Lennartz, Steven

**Sent:** Thursday, March 15, 2018 11:16 AM

**To:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Thurman, Nelson <[Thurman.Nelson@epa.gov](mailto:Thurman.Nelson@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

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# Ex. 5 Deliberative Process (DP)

**From:** Panger, Melissa

**Sent:** Thursday, March 15, 2018 10:57 AM

**To:** Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Thurman, Nelson <[Thurman.Nelson@epa.gov](mailto:Thurman.Nelson@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

# Ex. 5 Deliberative Process (DP)

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Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

---

**From:** Garber, Kristina

**Sent:** Thursday, March 15, 2018 10:38 AM

**To:** Thurman, Nelson <[Thurman.Nelson@epa.gov](mailto:Thurman.Nelson@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

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# Ex. 5 Deliberative Process (DP)

# **Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Thanks,  
Kris

Kris Garber, Senior Science Advisor  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
US Environmental Protection Agency  
Mail Code: 7507P  
1200 Pennsylvania Ave NW  
Washington DC 20460-0001

Phone: 703-347-8940



Message

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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 3/15/2018 5:58:21 PM  
**To:** Peck, Charles [Peck.Charles@epa.gov]; Lennartz, Steven [Lennartz.Steven@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]; Thurman, Nelson [Thurman.Nelson@epa.gov]; Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
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**Subject:** discuss application of usage data to EFED's crop land covers (grouped CDL classes)

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Kris Garber, Senior Science Advisor  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
US Environmental Protection Agency  
Mail Code: 7507P  
1200 Pennsylvania Ave NW  
Washington DC 20460-0001

Phone: 703-347-8940

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**Sent:** 3/15/2018 5:48:47 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]; Lennartz, Steven [Lennartz.Steven@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]; Thurman, Nelson [Thurman.Nelson@epa.gov]  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

## Ex. 5 Deliberative Process (DP)

**From:** Rossmeisl, Colleen  
**Sent:** Thursday, March 15, 2018 1:47 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Thurman, Nelson <Thurman.Nelson@epa.gov>  
**Subject:** RE: discuss application of usage data to EFED's crop land covers (grouped CDL classes)

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**From:** Peck, Charles  
**Sent:** Thursday, March 15, 2018 1:32 PM  
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Kris Garber, Senior Science Advisor  
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US Environmental Protection Agency  
Mail Code: 7507P  
1200 Pennsylvania Ave NW  
Washington DC 20460-0001

Phone: 703-347-8940

Message

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**Sent:** 2/6/2018 9:56:39 PM  
**To:** Thurman, Nelson [Thurman.Nelson@epa.gov]  
**Subject:** PCT meeting

## Ex. 5 Deliberative Process (DP)

Kris Garber, Senior Science Advisor  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
US Environmental Protection Agency  
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Phone: 703-347-8940

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**Sent:** 5/9/2019 4:07:58 PM  
**To:** Anderson, Brian [Anderson.Brian@epa.gov]  
**CC:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Connolly, Jennifer [Connolly.Jennifer@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** Re: draft milestones, timeline and additional details relevant to usage method

They said it was reasonable

On May 9, 2019, at 11:55 AM, Anderson, Brian <Anderson.Brian@epa.gov> wrote:

Did we hear back from BEAD regarding whether they will be able to do this in May?

---

**From:** Garber, Kristina  
**Sent:** Wednesday, May 08, 2019 12:04 PM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: draft milestones, timeline and additional details relevant to usage method

One more thing...after BEAD analyzes the non-crop data and addresses our requests regarding the HI, PR and other territory usage data, the SUUMs will need to be updated. I added one more major focus area to the list below to incorporate this.

---

**From:** Garber, Kristina  
**Sent:** Wednesday, May 08, 2019 10:57 AM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: draft milestones, timeline and additional details relevant to usage method

Responses below

---

**From:** Anderson, Brian  
**Sent:** Wednesday, May 08, 2019 10:50 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: draft milestones, timeline and additional details relevant to usage method

Thanks Kris – just a few questions – thanks for putting this together, it helps a lot.

Brian



**From:** Garber, Kristina

**Sent:** Wednesday, May 08, 2019 10:09 AM

**To:** Anderson, Brian <Anderson.Brian@epa.gov>

**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>;

Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>

**Subject:** draft milestones, timeline and additional details relevant to usage method

1. Surrogacy of crops with no survey info (relevant to ag data in 48 conterminous states)
  - a. The decision for how do deal with surrogacy for crops that are not surveyed in a given state but are surveyed in others has been made by Colleen, Jen and Kris
    - i. <!--[if !supportLists]--><!--[endif]-->Summary: the maximum state-level PCT available will be used as a surrogate, we will also run the national level average for characterization purposes. In addition, we will assume no usage on the crop-state combinations with no survey data to explore influence of surrogate assumptions on results.

Seems logical. I think just deciding is the right approach. I just want to make sure that doing it 3 different ways isn't too taxing on the GIS folks?

When data are available for a crop-state combination, we are bracketing our results with different assumptions of how the treated acres are distributed relative to the species range (there are three different sets of results). So, this is not going to create any more runs than we are already doing.

- b. For crops that are not surveyed (at all), I will propose appropriate surrogates from the surveyed crops (JEN- could you please send me the list of crops that are not surveyed and I will draft the list this week)

What about just using the max PCT we have for any crop in the SUUM for these?  
There are no PCTs for these crops because they were never surveyed.

- c. Jen will need to extract the defaults from the SUUM. We should be ready to deal with surrogates end of May [Jen – we can get someone to help with this]
2. Usage data for non-crop uses of carbaryl
  - a. Rangeland – we will need a table from BEAD end of May [who is doing this from BEAD? Claire And this is a PCT by state table? Yes if not, what is this table?]
  - b. Forestry – we will need a table from BEAD end of May [who is doing this from BEAD? Diann provided the data originally. I will see if Claire can do this. And this is a PCT by state table? No if not, what is this table? PCT is by Forest service region]
  - c. Residential –

#### Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

3. Usage data for HI, PR and other territories (need input from BEAD by June 15)
  - a. We need input from BEAD on HI state data
    - i. <!--[if !supportLists]--><!--[endif]-->Usage data are only available for methomyl
    - ii. <!--[if !supportLists]--><!--[endif]-->Sales data may be available for both carbaryl and methomyl
  - b. We would like input from BEAD on other options for determining usage in HI and territories

## Ex. 5 Deliberative Process (DP)

4. Method write up
  - a. Kris will write up an attachment describing the usage data and approaches for applying them in the ESA method
    - i. <!--[if !supportLists]--><!--[endif]-->Tentative due date for DRAFT: June 30
    - ii. <!--[if !supportLists]--><!--[endif]-->Team reviews can take place in July
      1. Due to timing of when the analysis needs to be initiated, major changes to the method that result from team review (including EFED and BEAD) may not be incorporated until the final assessment
5. BEAD updates SUUMs for carbaryl and methomyl
  - a. Timing unknown

## Message

**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 5/8/2019 6:17:49 PM  
**To:** Garber, Kristina [Garber.Kristina@epa.gov]  
**Subject:** RE: regroup on ESA usage approaches for non-crop uses

Notes from todays meeting

-----Original Appointment-----

**From:** Garber, Kristina  
**Sent:** Tuesday, April 30, 2019 9:21 AM  
**To:** Garber, Kristina; Suarez, Mark; Paisley-Jones, Claire; Becker, Jonathan; Connolly, Jennifer; Peck, Charles; Panger, Melissa; Donovan, Elizabeth; White, Katrina; Rossmeisl, Colleen; Anderson, Brian  
**Subject:** regroup on ESA usage approaches for non-crop uses  
**When:** Wednesday, May 08, 2019 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** DCRoomPYS7771D/Potomac-Yard-One

Hello all,

I am working at home today. so, could someone who is at PYS please set up either the conference line or skype. I don't think that we need to visualize any materials today, so audio will be sufficient. Thanks!

Kris

## Join Skype Meeting

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## Join by phone

Toll number: **Ex. 6 Personal Privacy (PP)** English (United States)

[Find a local number](#)

**Ex. 6 Personal Privacy (PP)**

[Forgot your dial-in PIN?](#) | [Help](#)

## Agenda

1. Discuss timeline for carbaryl rangeland and forestry PCTs

# **Ex. 5 Deliberative Process (DP)**

*End of may is doable for final rangeland PCTs*

*Forestry: Claire will work on this. Deadline end of may*

2. Discuss request for review of HI state data for methomyl

**Ex. 5 Deliberative Process (DP)**

3. Discuss request for review of sales data for HI, PR and territories

4. Timing of updated SUUMs
5. Timing of detailed usage method
6. New ag census

Claire is going to work on an analysis of the 2017 vs. 2012 census to see if they are different. She is also going to pull the new data set into the format we need.

We indicated that this is a lower priority.

7. Need method may 31 for surrogacy or EFED will use our own method.
8. Working on glyphosate

Message

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**Sent:** 5/21/2019 2:00:12 PM  
**To:** Garber, Kristina [Garber.Kristina@epa.gov]  
**Subject:** RE: regroup on usage method for ESA

-----Original Appointment-----

**From:** Garber, Kristina  
**Sent:** Wednesday, May 08, 2019 2:15 PM  
**To:** Garber, Kristina; Paisley-Jones, Claire; Suarez, Mark; Panger, Melissa; Peck, Charles; Connolly, Jennifer; Becker, Jonathan; Rossmesl, Colleen; Donovan, Elizabeth; Anderson, Brian  
**Subject:** regroup on usage method for ESA  
**When:** Tuesday, May 21, 2019 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** DCRoomPYS10771/Potomac-Yard-One

Agenda

1. Discuss draft PCTs for rangeland and forestry uses of carbaryl

## Ex. 5 Deliberative Process (DP)

2. Check in on request for usage data for HI, PR and other territories

Mid june is goal for getting us an answer.

3. Check in on status of surrogacy approach for applying usage when it is not available for a state-crop combination

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**Sent:** 2/14/2018 2:02:46 PM  
**To:** Khan, Faruque [Khan.Faruque@epa.gov]  
**Subject:** RE: discuss draft method for incorporating usage data (PCT) into ESA method

Thank you!

---

**From:** Khan, Faruque  
**Sent:** Wednesday, February 14, 2018 8:44 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Subject:** RE: discuss draft method for incorporating usage data (PCT) into ESA method

## Ex. 5 Deliberative Process (DP)

**From:** Garber, Kristina  
**Sent:** Tuesday, February 13, 2018 4:36 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Eckel, William <Eckel.William@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Rossmeis, Colleen <Rossmeis.Colleen@epa.gov>; Thurman, Nelson <Thurman.Nelson@epa.gov>; Barrett, Dena <Barrett.Dena@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>; Khan, Faruque <Khan.Faruque@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Odenkirchen, Edward <Odenkirchen.Edward@epa.gov>; Sappington, Keith <Sappington.Keith@epa.gov>; Steeger, Thomas <Steeger.Thomas@epa.gov>  
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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 5/8/2019 2:56:51 PM  
**To:** Anderson, Brian [Anderson.Brian@epa.gov]  
**CC:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Connolly, Jennifer [Connolly.Jennifer@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** RE: draft milestones, timeline and additional details relevant to usage method

Responses below

---

**From:** Anderson, Brian  
**Sent:** Wednesday, May 08, 2019 10:50 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: draft milestones, timeline and additional details relevant to usage method

Thanks Kris – just a few questions – thanks for putting this together, it helps a lot.

Brian

---

**From:** Garber, Kristina  
**Sent:** Wednesday, May 08, 2019 10:09 AM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** draft milestones, timeline and additional details relevant to usage method

1. Surrogacy of crops with no survey info (relevant to ag data in 48 conterminous states)
  - a. The decision for how do deal with surrogacy for crops that are not surveyed in a given state but are surveyed in others has been made by Colleen, Jen and Kris
    - i. Summary: the maximum state-level PCT available will be used as a surrogate, we will also run the national level average for characterization purposes. In addition, we will assume no usage on the crop-state combinations with no survey data to explore influence of surrogate assumptions on results.

Seems logical. I think just deciding is the right approach. I just want to make sure that doing it 3 different ways isn't too taxing on the GIS folks?

When data are available for a crop-state combination, we are bracketing our results with different assumptions of how the treated acres are distributed relative to the species range (there are three different sets of results). So, this is not going to create any more runs than we are already doing.

- b. For crops that are not surveyed (at all), I will propose appropriate surrogates from the surveyed crops (JEN- could you please send me the list of crops that are not surveyed and I will draft the list this week)

What about just using the max PCT we have for any crop in the SUUM for these?  
There are no PCTs for these crops because they were never surveyed.

- c. Jen will need to extract the defaults from the SUUM. We should be ready to deal with surrogates end of May [Jen – we can get someone to help with this]
- 2. Usage data for non-crop uses of carbaryl
  - a. Rangeland – we will need a table from BEAD end of May [who is doing this from BEAD? Claire And this is a PCT by state table? Yes if not, what is this table?]
  - b. Forestry – we will need a table from BEAD end of May [who is doing this from BEAD? Diann provided the data originally. I will see if Claire can do this. And this is a PCT by state table? No if not, what is this table? PCT is by Forest service region]
  - c. Residential –

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

- 3. Usage data for HI, PR and other territories (need input from BEAD by June 15)
  - a. We need input from BEAD on HI state data
    - i. Usage data are only available for methomyl
    - ii. Sales data may be available for both carbaryl and methomyl
  - b. We would like input from BEAD on other options for determining usage in HI and territories
- 4. Method write up
  - a. Kris will write up an attachment describing the usage data and approaches for applying them in the ESA method
    - i. Tentative due date for DRAFT: June 30
    - ii. Team reviews can take place in July
      - 1. Due to timing of when the analysis needs to be initiated, major changes to the method that result from team review (including EFED and BEAD) may not be incorporated until the final assessment



Message

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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 6/21/2019 1:19:09 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** Re: notes from check in on ESA usage method

Thanks, Mark. Monday works for me. Have a good weekend.

Kris

On Jun 21, 2019, at 8:51 AM, Suarez, Mark <Suarez.Mark@epa.gov> wrote:

Kris,

**Ex. 6 Personal Privacy (PP)**

On the HI and PR data, I'm aiming for today, but it may be Monday morning... BTW, I may had a way to provide some PR data. I'm working on it.

Mark

---

**From:** Garber, Kristina  
**Sent:** Thursday, June 20, 2019 4:29 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** FW: notes from check in on ESA usage method

Hi Mark,

I just want to check in on the HI and PR data. What is your timeline for compiling the all insecticide numbers?

Thanks,  
Kris

---

**From:** Garber, Kristina  
**Sent:** Tuesday, June 18, 2019 5:14 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Anderson, Brian <anderson.brian@epa.gov>; White, Katrina <White.Katrina@epa.gov>  
**Subject:** RE: notes from check in on ESA usage method

Hello,

I want to follow up on two things:

**Ex. 5 Deliberative Process (DP)**

Thanks,  
Kris

---

**From:** Garber, Kristina

**Sent:** Wednesday, June 12, 2019 11:00 AM

**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Anderson, Brian <anderson.brian@epa.gov>; White, Katrina <White.Katrina@epa.gov>

**Subject:** notes from check in on ESA usage method

Here are my notes from today's meeting. Feel free to provide edits and comments.

## Ex. 5 Deliberative Process (DP)

**Follow up item:** Mark and Claire would like to document this review.

- this also applies to review of NY data.
- Consider writing up an appendix that includes the reviewed and rejected data and rationales

## Ex. 5 Deliberative Process (DP)

- Data need to be divided up to be comparable to landcovers used for HI and PR, here is the list of landcovers:
  1. Ag
  2. Pasture
  3. Rangeland
  4. Developed
  5. Forest Trees
  6. Nurseries
  7. Open Space Developed
  8. Right of Way
- Although the 2017 census data is available (usage data for HI, not PR), we will use 2012 to be consistent with rest of method

## Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

**Follow up item:** Mark will provide PCT for as many of the 8 landcover classes as possible in the list above (end of next week?)

- Forest trees not needed because of forest service data
- Is it possible to get these data by the end of next week (June 21)?

Message

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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 2/12/2018 4:04:33 PM  
**To:** Connolly, Jennifer [Connolly.Jennifer@epa.gov]  
**Subject:** RE: revised slide deck on usage method

## Ex. 5 Deliberative Process (DP)

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**From:** Connolly, Jennifer  
**Sent:** Monday, February 12, 2018 10:38 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Subject:** RE: revised slide deck on usage method

## Ex. 5 Deliberative Process (DP)

**From:** Connolly, Jennifer  
**Sent:** Friday, February 9, 2018 7:19 PM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Subject:** RE: revised slide deck on usage method

## Ex. 5 Deliberative Process (DP)

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**From:** Garber, Kristina  
**Sent:** Friday, February 9, 2018 6:10 PM

**To:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>

**Subject:** RE: revised slide deck on usage method

# Ex. 5 Deliberative Process (DP)

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**From:** Garber, Kristina

**Sent:** Friday, February 9, 2018 5:52 PM

**To:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>

**Subject:** FW: revised slide deck on usage method

## Ex. 5 Deliberative Process (DP)

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**From:** Garber, Kristina

**Sent:** Friday, February 09, 2018 5:49 PM

**To:** White, Katrina <[White.Katrina@epa.gov](mailto:White.Katrina@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Blankinship, Amy <[Blankinship.Amy@epa.gov](mailto:Blankinship.Amy@epa.gov)>; Donovan, Elizabeth <[Donovan.Elizabeth@epa.gov](mailto:Donovan.Elizabeth@epa.gov)>; Eckel, William <[Eckel.William@epa.gov](mailto:Eckel.William@epa.gov)>; Kanarek, Andrew <[Kanarek.Andrew@epa.gov](mailto:Kanarek.Andrew@epa.gov)>; Harwood, Douglas <[harwood.douglas@epa.gov](mailto:harwood.douglas@epa.gov)>; Wendel, Christina <[Wendel.Christina@epa.gov](mailto:Wendel.Christina@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

**Subject:** revised slide deck on usage method

# Ex. 5 Deliberative Process (DP)

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**From:** White, Katrina

**Sent:** Friday, February 09, 2018 11:34 AM

**To:** Peck, Charles <Peck.Charles@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Kanarek, Andrew <Kanarek.Andrew@epa.gov>; Harwood, Douglas <harwood.douglas@epa.gov>; Wendel, Christina <Wendel.Christina@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>

**Subject:** RE: continue conversation on usage data for esa (part 4)

## Ex. 5 Deliberative Process (DP)

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Katrina White

Senior Fate Scientist

Environmental Risk Branch IV

Environmental Fate & Effects Division

703-308-4536

[White.katrina@epa.gov](mailto:White.katrina@epa.gov)

---

**From:** Peck, Charles

**Sent:** Thursday, February 08, 2018 2:51 PM

**To:** Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Kanarek, Andrew <Kanarek.Andrew@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Harwood, Douglas <harwood.douglas@epa.gov>; Wendel, Christina <Wendel.Christina@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>

**Subject:** RE: continue conversation on usage data for esa (part 4)

## Ex. 5 Deliberative Process (DP)

Chuck Peck

OPP/EFED/ERB VI

Potomac Yard South

Crystal City, VA

Room 12314

(703) 347-8064

[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

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**From:** Panger, Melissa

**Sent:** Thursday, February 08, 2018 10:44 AM

**To:** Garber, Kristina <Garber.Kristina@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Kanarek, Andrew <Kanarek.Andrew@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Harwood, Douglas <harwood.douglas@epa.gov>; Wendel, Christina <Wendel.Christina@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>

**Subject:** RE: continue conversation on usage data for esa (part 4)

# Ex. 5 Deliberative Process (DP)

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Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

---

**From:** Garber, Kristina  
**Sent:** Wednesday, February 07, 2018 7:26 PM  
**To:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Blankinship, Amy <[Blankinship.Amy@epa.gov](mailto:Blankinship.Amy@epa.gov)>; Donovan, Elizabeth <[Donovan.Elizabeth@epa.gov](mailto:Donovan.Elizabeth@epa.gov)>; Eckel, William <[Eckel.William@epa.gov](mailto:Eckel.William@epa.gov)>; Kanarek, Andrew <[Kanarek.Andrew@epa.gov](mailto:Kanarek.Andrew@epa.gov)>; White, Katrina <[White.Katrina@epa.gov](mailto:White.Katrina@epa.gov)>; Harwood, Douglas <[harwood.douglas@epa.gov](mailto:harwood.douglas@epa.gov)>; Wendel, Christina <[Wendel.Christina@epa.gov](mailto:Wendel.Christina@epa.gov)>; Rossmesl, Colleen <[Rossmesl.Colleen@epa.gov](mailto:Rossmesl.Colleen@epa.gov)>  
**Subject:** continue conversation on usage data for esa (part 4)

# Ex. 5 Deliberative Process (DP)

Kris Garber, Senior Science Advisor  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
US Environmental Protection Agency  
Mail Code: 7507P  
1200 Pennsylvania Ave NW  
Washington DC 20460-0001

Phone: 703-347-8940

Message

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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 1/29/2018 2:28:16 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**CC:** Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** RE: agenda for ESA meeting Tuesday...

Sounds good. I told Jen that we would make sure she was on the line for the PCT-spray drift discussions.

---

**From:** Rossmeisl, Colleen  
**Sent:** Monday, January 29, 2018 9:17 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Cc:** Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: agenda for ESA meeting Tuesday...

I can just add those to this agenda, but just note these items are a running list we will continue to discuss at any subsequent meetings (sound good?)

**Ex. 5 Deliberative Process (DP)**

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**From:** Garber, Kristina  
**Sent:** Monday, January 29, 2018 9:11 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** Re: agenda for ESA meeting Tuesday...

Yes to the tums

After we finish discussing the timeline, I have other agenda items that we can cover. I compiled another running list of items we need to resolve (obviously, this is too much to cover in one meeting). I figure we can use any of the ESA team meetings to discuss these items:

**Ex. 5 Deliberative Process (DP)**

On Jan 29, 2018, at 9:04 AM, Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov> wrote:

I was going to send this for meeting agenda Tuesday

- Timeline and milestones (I went through Gantt chart, I will send summary of potential date updates prior to meeting)
  - o All other topics may come off of this (updates on thresholds, overlap, other data needed to move forward...)

Anything to add at this point? Other than I should probably bring a bottle of Tums to the meeting ;-)



For the update, I was going to list the dates, and sub-bullets of everything that should be done by then in order to be able to move forward.

Message

---

**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 1/29/2018 1:25:24 PM  
**To:** Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** RE: decision points for overlap

Melissa,

I was aware of the majority of these issues. The biggest one is the drift and usage method. The huc12 issue with aquatics is related to the mag tool current construct.

I don't see a need to talk with Jen about these things. I think that we should try to work through (and resolve) as many of these items this week at our ESA meetings.

Kri

---

**From:** Panger, Melissa  
**Sent:** Monday, January 29, 2018 7:49 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Subject:** FW: decision points for overlap

Hi Kris,

Do you think it would be worth setting up a meeting with Jen... I thought things were more 'set' than what's in her e-mail?

---

Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

---

**From:** Anderson, Brian  
**Sent:** Monday, January 29, 2018 7:30 AM  
**To:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>  
**Subject:** decision points for overlap

Hey Guys,

I asked Jen to send me a list of decision points that affect her ability to get the overlap done.

Is what's below consistent with your understanding as well?

Just making sure – I thought some of these things are decided – I don't want her struggling with things if they are not needed.

#### GIS Analysis

- Aquatic species be incorporated as individual HUC12 or as the lump species range – right now trying to run it both way
  - Up until last week under the impression we were running the range files
  - Need to add in some re-development for the HUC12 tool that was not planned for; and address any issues that come up
    - HUC12 overlap take a much longer than the species range overlap, from a processing perspective
- Clear understanding of how the overlap is going to be used for the probabilistic method – need to be sure we are not violating assumptions that go into spatial models
  - I was under the impression up until last week that the overlap was not going to be part of the step 2 probabilistic method
- Adjusting of the Action Area for usage
  - For this to be used in the probabilistic method there is a desire to adjusted it for usage; up until last week we were not adjusting the action area
  - Some of the current proposals violate spatial assumptions
- Final Agreement on applying On/Off Field
- Outstanding Use Layers

#### Direct overlap-

- Usage- agreement how we plan to apply usage for aquatics; we have a tentative agreement for terrestrials from today
  - May require some additional re-development; depending on how far deviate from our initial thoughts on usage
- Need final agreement on the PCT tables that will be used to adjust overlap
  - We made some agreement today but I'm sure questions will come up as I'm re-formatting the BEAD table
- Methomyl tables in Excel – with no formatting
- 

#### Adjustment of drift

- May require some additional unplanned for re-development; depending
- Current proposed ideas violate spatial assumptions – if we move forward with them we will need to clearly state we are violated spatial assumptions the result of which could be underestimate the drift.

## Message

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**From:** Garber, Kristina [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C4FBFBF6569041F4BD559765E027AA31-KRISTINA GARBER]  
**Sent:** 3/5/2018 9:14:35 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Anderson, Brian [Anderson.Brian@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]; Connolly, Jennifer [Connolly.Jennifer@epa.gov]; Lennartz, Steven [Lennartz.Steven@epa.gov]; Eckel, William [Eckel.William@epa.gov]; White, Katrina [White.Katrina@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** RE: start.... is this accurate?

### Ex. 5 Deliberative Process (DP)

**From:** Rossmeisl, Colleen  
**Sent:** Friday, March 02, 2018 4:07 PM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Eckel, William <Eckel.William@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: start.... is this accurate?

## Ex. 5 Deliberative Process (DP)

**From:** Anderson, Brian  
**Sent:** Friday, March 02, 2018 12:52 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** start.... is this accurate?

## Ex. 5 Deliberative Process (DP)

### Workshop Parameters

# **Ex. 5 Deliberative Process (DP)**

# **Ex. 5 Deliberative Process (DP)**

Message

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**From:** paisley-jones.claire@epa.gov  
**Sent:** 5/19/2020 11:21:52 PM  
**To:** suarez.mark@epa.gov; paisley-jones.claire@epa.gov  
**Subject:** Conversation between paisley-jones.claire@epa.gov and suarez.mark@epa.gov

## **Ex. 5 Deliberative Process (DP)**

Message

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**From:** suarez.mark@epa.gov  
**Sent:** 5/6/2020 3:16:11 AM  
**To:** suarez.mark@epa.gov; paisley-jones.claire@epa.gov  
**Subject:** Conversation between suarez.mark@epa.gov and paisley-jones.claire@epa.gov

## **Ex. 5 Deliberative Process (DP)**



Message

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**From:** Paisley-Jones, Claire [paisley-jones.claire@epa.gov]  
**Sent:** 2/6/2018 7:01:26 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** Conversation with Sims, Diann

Paisley-Jones, Claire 1:10 PM:

so apparently there's an EFED meeting about ESA usage data on thursday... is that on your calendar?

Paisley-Jones, Claire 1:11 PM:

it isn't on my calendar

Sims, Diann 1:12 PM:

There is. It is a meeting with USDA. I have a meeting with Brian later this afternoon. I am attending, but I believe that this is more a listening session and to try to get us on the same page about the usage data.

Paisley-Jones, Claire 1:14 PM:

OK, i just wanted to make sure we were included :)

Paisley-Jones, Claire 1:15 PM:

if you'd like me to come I can, it might be useful to hear what they have to say

Sims, Diann 1:15 PM:

Yes, we are included.....and then some

Sims, Diann 1:15 PM:

I'll feel Brian out about it this afternoon

Paisley-Jones, Claire 1:16 PM:

sounds good :)

Paisley-Jones, Claire 1:17 PM:

I didn't get a reply about the PCT definition. Can you also see if he got what he needed on that (if you think of it)

Sims, Diann 1:17 PM:

OK. I'll make a note of it.

Paisley-Jones, Claire 1:19 PM:

thanks!

Paisley-Jones, Claire 1:19 PM:

ooh! what's this follow up meeting at 2 for?

Paisley-Jones, Claire 1:20 PM:

i don't know what else to say about the UU choices... it didn't look like there was any more/new info in the invite

Sims, Diann 1:21 PM:

I don't know. Jonathan suggested a follow up meeting on the topic and Tim added it to today's agenda.

Paisley-Jones, Claire 1:22 PM:

hahaha ok. I'll just come and listen then :)

Sims, Diann 1:23 PM:

Hmmm, you want to be sure that the "projects" don't end up in your lap. That can happen when you're absent and your boss is not paying attention. :)

Paisley-Jones, Claire 1:24 PM:

i'll be vigilant! ;)

Message

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**From:** Suarez, Mark [suarez.mark@epa.gov]  
**Sent:** 5/5/2020 5:17:41 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** Conversation with Suarez, Mark

## Ex. 5 Deliberative Process (DP)

# **Ex. 5 Deliberative Process (DP)**

Message

---

**From:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Sent:** 6/4/2019 1:29:22 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Thanks Mark!

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Friday, May 31, 2019 3:51 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,  
I have a few comments, as well. I added them to Claire's document.

Mark

---

**From:** Paisley-Jones, Claire  
**Sent:** Thursday, May 30, 2019 2:37 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

A few comments.

---

**From:** Doucoure, Cynthia  
**Sent:** Wednesday, May 29, 2019 3:17 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I've completed the update of the Bromoxynil SUUM. Please see both the Excel sheet with SUUM data and the memo. Let me know if you have any questions. Please note that I used Kynetec data for crops grown in CA except where Kynetec did not have usage data. Let me know if you have any questions.

Thanks,

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)

Thanks,  
Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

Hi Mark/Claire,

I'm attaching the Bromoxynil SUUM for your review with the understanding that the time period remains the same (2012-2016) and that I'm still reviewing the PCT data. See responses in blue font below to your comments.

I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** ESA Als

Cynthia,

Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

**As background:** we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.

**The prometryn SUUM uses the phrase "not surveyed" and "not surveyed at state level" in table 2. Can these be interpreted to mean the same thing as "not surveyed at national level"? Yes in most of these cases but not always; some crops may not be surveyed nationally but may have CA data (i.e. cilantro).**

For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate “not surveyed at national level” for these uses? These uses are extracted as “premises/areas” in the PLUS reports. I added both terms in the SUUM to make it clearer.

Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I’ve corrected the barley in WA and the alfalfa data. I’m now reviewing the PCT averages for all crops using our agreed upon method.

Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Sent:** 5/31/2019 7:51:23 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review  
**Attachments:** Bromoxynil SUUM.Update.2019(cpj\_ms).docx

Cynthia,

I have a few comments, as well. I added them to Claire's document.

Mark

---

**From:** Paisley-Jones, Claire  
**Sent:** Thursday, May 30, 2019 2:37 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

A few comments.

---

**From:** Doucoure, Cynthia  
**Sent:** Wednesday, May 29, 2019 3:17 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I've completed the update of the Bromoxynil SUUM. Please see both the Excel sheet with SUUM data and the memo. Let me know if you have any questions. Please note that I used Kynetec data for crops grown in CA except where Kynetec did not have usage data. Let me know if you have any questions.

Thanks,

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

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**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)

Thanks,

Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I'm attaching the Bromoxynil SUUM for your review with the understanding that the time period remains the same (2012-2016) and that I'm still reviewing the PCT data. See responses in blue font below to your comments.

I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** ESA AIs

Cynthia,  
Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

**As background:** we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.

**The prometryn SUUM uses the phrase "not surveyed" and "not surveyed at state level" in table 2. Can these be interpreted to mean the same thing as "not surveyed at national level"? Yes in most of these cases but not always; some crops may not be surveyed nationally but may have CA data (i.e. cilantro).**

**For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate "not surveyed at national level" for these uses? These uses are extracted as "premises/areas" in the PLUS reports. I added both terms in the SUUM to make it clearer.**

**Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I've corrected the barley in WA and the alfalfa data. I'm now reviewing the PCT averages for all crops using our agreed upon method.**

Thank you.

Mark



Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Sent:** 5/29/2019 4:52:49 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; OPP Usage and Label Use Team [OPP\_Usage\_and\_Label\_Use\_Team@epa.gov]  
**Subject:** RE: California PUR PCTs

## Ex. 5 Deliberative Process (DP)

Thoughts?  
Claire

---

**From:** Suarez, Mark  
**Sent:** Wednesday, May 29, 2019 12:44 PM  
**To:** OPP Usage and Label Use Team <OPP\_Usage\_and\_Label\_Use\_Team@epa.gov>  
**Subject:** California PUR PCTs

All,

I spent some time pouring over the CA PUR data and we can provide some crops with a reasonable degree of certainty. **Ex. 5 Deliberative Process (DP)**

## Ex. 5 Deliberative Process (DP)

I'd like to discuss this at the ULUT meeting next week, if Steve has time on the agenda.

Regards,  
Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Sent:** 5/23/2019 2:39:55 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Great! I hope to have it finished by early next week at the latest.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

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How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)  
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**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

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Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

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**Sent:** Tuesday, May 07, 2019 12:44 PM

**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>

**Subject:** ESA Als

Cynthia,

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Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Sent:** 5/7/2019 8:58:34 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review  
**Attachments:** Bromoxynil SUUM.Udate.2019.docx; Bromoxynil (035302 128920) National and State Use and Usage Summary.pdf  
**Flag:** Follow up

Hi Mark/Claire,

I'm attaching the Bromoxynil SUUM for your review with the understanding that the time period remains the same (2012-2016) and that I'm still reviewing the PCT data. See responses in blue font below to your comments.

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Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

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**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** ESA AIs

Cynthia,  
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**From NMFS:**

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Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Smearman, Stephen [Smearman.Stephen@epa.gov]  
**Sent:** 5/29/2018 8:14:04 PM  
**To:** Sells, Dexter [Sells.Dexter@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

## Ex. 5 Deliberative Process (DP)

Mas cerveza por favor!

**From:** Sells, Dexter  
**Sent:** Tuesday, May 29, 2018 3:28 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; OPP BEAD EAB <OPP\_BEAD\_EAB@epa.gov>; OPP BEAD BAB <OPP\_BEAD\_BAB@epa.gov>; OPP BEAD SIAB <OPP\_BEAD\_SIAB@epa.gov>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Claire,

## Ex. 5 Deliberative Process (DP)

Perhaps EAB and SIAB can provide a consensus (and formal) methodology.

Dexter

---

**From:** Paisley-Jones, Claire  
**Sent:** Tuesday, May 29, 2018 14:41

**To:** Sells, Dexter <Sells.Dexter@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; OPP BEAD EAB <OPP\_BEAD\_EAB@epa.gov>; OPP BEAD BAB <OPP\_BEAD\_BAB@epa.gov>; OPP BEAD SIAB <OPP\_BEAD\_SIAB@epa.gov>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Hi Dexter et al.,

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Sells, Dexter  
**Sent:** Tuesday, May 29, 2018 8:35 AM  
**To:** Atwood, Donald <Atwood.Donald@epa.gov>; OPP BEAD EAB <OPP\_BEAD\_EAB@epa.gov>; OPP BEAD BAB <OPP\_BEAD\_BAB@epa.gov>; OPP BEAD SIAB <OPP\_BEAD\_SIAB@epa.gov>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Don,



# Ex. 5 Deliberative Process (DP)

Dexter

---

**From:** Atwood, Donald

**Sent:** Monday, May 28, 2018 14:16

**To:** Sells, Dexter <[Sells.Dexter@epa.gov](mailto:Sells.Dexter@epa.gov)>; OPP BEAD EAB <[OPP\\_BEAD\\_EAB@epa.gov](mailto:OPP_BEAD_EAB@epa.gov)>; OPP BEAD BAB <[OPP\\_BEAD\\_BAB@epa.gov](mailto:OPP_BEAD_BAB@epa.gov)>; OPP BEAD SIAB <[OPP\\_BEAD\\_SIAB@epa.gov](mailto:OPP_BEAD_SIAB@epa.gov)>

**Subject:** Re: 2012-2016 Usage Summaries from the S Drive

# Ex. 5 Deliberative Process (DP)

Donald W. Atwood, PhD  
Entomologist  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Biological Analysis Branch  
Environmental Protection Agency

email: [atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

Phone: (703) 308-8088

---

**From:** Sells, Dexter

**Sent:** Friday, May 25, 2018 1:06 PM

**To:** OPP BEAD EAB; OPP BEAD BAB; OPP BEAD SIAB

**Subject:** 2012-2016 Usage Summaries from the S Drive

Hello everyone,

# Ex. 5 Deliberative Process (DP)

Dexter

#### National Data

[https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated\\_across\\_year\\_NationalwithlbsAIPCT\\_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w12f38e3d35584792a3d3ea9a14a39ec5&csf=1&e=xAvVYQ](https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated_across_year_NationalwithlbsAIPCT_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w12f38e3d35584792a3d3ea9a14a39ec5&csf=1&e=xAvVYQ)



PctCropTreated\_across\_year\_NationalwithlbsAIPCT\_2016 DEXTER IS THE  
MAN

Shared via SharePoint

Fungicide Almonds IPRDIONE 369889 398771 196509 184 963009 501155 627945 307291 201 963009 444642  
467501 231775 188 983948 367277 378502 ...

#### State Data

[https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated\\_across\\_year\\_StatewithlbsAIPCT\\_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w13be639d680a486c950da07a4d749671&csf=1&e=wRHioE](https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated_across_year_StatewithlbsAIPCT_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w13be639d680a486c950da07a4d749671&csf=1&e=wRHioE)

PLEASE (I beg thee, I implore thee, and if the need arises, I'll scorn thee) do not overwrite the spreadsheet. –  
The 40<sup>th</sup> Commandment; Sections 155.56 and 155.58

Message

---

**From:** Smearman, Stephen [Smearman.Stephen@epa.gov]  
**Sent:** 5/29/2018 7:21:07 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Well said Claire.

---

**From:** Paisley-Jones, Claire  
**Sent:** Tuesday, May 29, 2018 2:41 PM  
**To:** Sells, Dexter <Sells.Dexter@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; OPP BEAD EAB <OPP\_BEAD\_EAB@epa.gov>; OPP BEAD BAB <OPP\_BEAD\_BAB@epa.gov>; OPP BEAD SIAB <OPP\_BEAD\_SIAB@epa.gov>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Hi Dexter et al.,

# Ex. 5 Deliberative Process (DP)

Claire

---

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**Sent:** Tuesday, May 29, 2018 8:35 AM  
**To:** Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; OPP BEAD EAB <[OPP\\_BEAD\\_EAB@epa.gov](mailto:OPP_BEAD_EAB@epa.gov)>; OPP BEAD BAB <[OPP\\_BEAD\\_BAB@epa.gov](mailto:OPP_BEAD_BAB@epa.gov)>; OPP BEAD SIAB <[OPP\\_BEAD\\_SIAB@epa.gov](mailto:OPP_BEAD_SIAB@epa.gov)>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Don,

## Ex. 5 Deliberative Process (DP)

Dexter

---

**From:** Atwood, Donald  
**Sent:** Monday, May 28, 2018 14:16  
**To:** Sells, Dexter <[Sells.Dexter@epa.gov](mailto:Sells.Dexter@epa.gov)>; OPP BEAD EAB <[OPP\\_BEAD\\_EAB@epa.gov](mailto:OPP_BEAD_EAB@epa.gov)>; OPP BEAD BAB <[OPP\\_BEAD\\_BAB@epa.gov](mailto:OPP_BEAD_BAB@epa.gov)>; OPP BEAD SIAB <[OPP\\_BEAD\\_SIAB@epa.gov](mailto:OPP_BEAD_SIAB@epa.gov)>  
**Subject:** Re: 2012-2016 Usage Summaries from the S Drive

## Ex. 5 Deliberative Process (DP)

Donald W. Atwood, PhD  
Entomologist  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Biological Analysis Branch  
Environmental Protection Agency

email: [atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)  
Phone: (703) 308-8088

---

**From:** Sells, Dexter  
**Sent:** Friday, May 25, 2018 1:06 PM

To: OPP BEAD EAB; OPP BEAD BAB; OPP BEAD SIAB  
Subject: 2012-2016 Usage Summaries from the S Drive

Hello everyone,

# Ex. 5 Deliberative Process (DP)

Dexter

National Data

[https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated\\_across\\_year\\_NationalwithlbsAIPCT\\_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w12f38e3d35584792a3d3ea9a14a39ec5&csf=1&e=xAvVYQ](https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated_across_year_NationalwithlbsAIPCT_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w12f38e3d35584792a3d3ea9a14a39ec5&csf=1&e=xAvVYQ)



PctCropTreated\_across\_year\_NationalwithlbsAIPCT\_2016 DEXTER IS THE  
MAN

Shared via SharePoint

Fungicide Almonds IPRDIONE 369889 398771 196509 184 963009 501155 627945 307291 201 963009 444642  
467501 231775 188 983948 367277 378502 ...

State Data

[https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated\\_across\\_year\\_StatewithlbsAIPCT\\_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w13be639d680a486c950da07a4d749671&csf=1&e=wRHioE](https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated_across_year_StatewithlbsAIPCT_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w13be639d680a486c950da07a4d749671&csf=1&e=wRHioE)

PLEASE (I beg thee, I implore thee, and if the need arises, I'll scorn thee) do not overwrite the spreadsheet. –  
The 40<sup>th</sup> Commandment; Sections 155.56 and 155.58

Message

---

**From:** Sims, Diann [Sims.Diann@epa.gov]  
**Sent:** 2/8/2018 9:04:23 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Usage data and PCT

## **Ex. 5 Deliberative Process (DP)**

-----Original Message-----

**From:** Paisley-Jones, Claire  
**Sent:** Thursday, February 8, 2018 4:01 PM  
**To:** Sims, Diann <Sims.Diann@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>  
**Subject:** RE: Usage data and PCT

## **Ex. 5 Deliberative Process (DP)**

-----Original Message-----

**From:** Sims, Diann  
**Sent:** Thursday, February 08, 2018 3:56 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>  
**Subject:** FW: Usage data and PCT

## **Ex. 5 Deliberative Process (DP)**

-----Original Message-----

**From:** Corbin, Mark  
**Sent:** Thursday, February 8, 2018 3:24 PM  
**To:** Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** Usage data and PCT

## **Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Sent from my iPhone

Message

---

**From:** Sims, Diann [Sims.Diann@epa.gov]  
**Sent:** 9/6/2017 2:10:11 PM  
**To:** Pease, Anita [Pease.Anita@epa.gov]  
**CC:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

Will do. Thanks for info.

---

**From:** Pease, Anita  
**Sent:** Wednesday, September 6, 2017 10:09 AM  
**To:** Sims, Diann <Sims.Diann@epa.gov>  
**Cc:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

Diann,

Please check in w Phil and Brian re: the timeline, which I believe is still in flux. Thanks.

---

Anita Pease  
Acting Deputy Director  
Biological and Economic Analysis Division (BEAD)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency

703-305-0392  
[pease.anita@epa.gov](mailto:pease.anita@epa.gov)

---

**From:** Sims, Diann  
**Sent:** Wednesday, September 06, 2017 9:13 AM  
**To:** Pease, Anita <[Pease.Anita@epa.gov](mailto:Pease.Anita@epa.gov)>  
**Cc:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

Anita,

It would help to know the EFED timeline. We can develop a delivery schedule around that. Should we check with Phil or Brian or is there another keeper of the schedule?

---

**From:** Pease, Anita  
**Sent:** Wednesday, September 6, 2017 7:43 AM  
**To:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Cc:** Miller, Wynne <[Miller.Wynne@epa.gov](mailto:Miller.Wynne@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Villanueva, Philip <[Villanueva.Philip@epa.gov](mailto:Villanueva.Philip@epa.gov)>  
**Subject:** FW: Diazinon (057801) National and State Summary Use and Usage Summary

Hi Diann and Claire,

EFED intends to use this type of analysis in the revised ESA methodology for carbaryl and methomyl and is currently scoping out a timeline to complete a revised biological evaluation for these two chemicals. Within the next couple of



weeks, could you please provide an estimated timeframe to complete a similar level of analysis for carbaryl and methomyl? This information will be extremely useful in refining the potential exposure of pesticides to listed species based on actual use/useage information. Thanks!

---

Anita Pease  
Acting Deputy Director  
Biological and Economic Analysis Division (BEAD)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency

703-305-0392  
[pease.anita@epa.gov](mailto:pease.anita@epa.gov)

---

**From:** Garber, Kristina  
**Sent:** Tuesday, September 05, 2017 2:37 PM  
**To:** Echeverria, Marietta <[Echeverria.Marietta@epa.gov](mailto:Echeverria.Marietta@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Villanueva, Philip <[Villanueva.Philip@epa.gov](mailto:Villanueva.Philip@epa.gov)>; Pease, Anita <[Pease.Anita@epa.gov](mailto:Pease.Anita@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>  
**Subject:** FW: Diazinon (057801) National and State Summary Use and Usage Summary

## Ex. 5 Deliberative Process (DP)

---

**From:** Garber, Kristina  
**Sent:** Wednesday, October 26, 2016 10:09 AM  
**To:** Pease, Anita <[Pease.Anita@epa.gov](mailto:Pease.Anita@epa.gov)>  
**Subject:** Fwd: Diazinon (057801) National and State Summary Use and Usage Summary

Here's the final memo from BEAD on the refined usage analysis for diazinon.

Begin forwarded message:

**From:** "Russell, CarolynY" <[Russell.Carolyny@epa.gov](mailto:Russell.Carolyny@epa.gov)>  
**To:** "Garber, Kristina" <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>, "Nguyen, Khue" <[Nguyen.Khue@epa.gov](mailto:Nguyen.Khue@epa.gov)>  
**Cc:** "Paisley-Jones, Claire" <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>, "Miller, Wynne" <[Miller.Wynne@epa.gov](mailto:Miller.Wynne@epa.gov)>, "Jarboe, Stephen" <[Jarboe.Steve@epa.gov](mailto:Jarboe.Steve@epa.gov)>, "Doucoure, Cynthia" <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>, "Prieto, Rafael" <[Prieto.Rafael@epa.gov](mailto:Prieto.Rafael@epa.gov)>, "Shah, Aruna"

<Shah.Aruna@epa.gov>, "Atwood, Donald" <Atwood.Donald@epa.gov>

**Subject: Diazinon (057801) National and State Summary Use and Usage Summary**

Your message is ready to be sent with the following file or link attachments:

Diazinon.pdf

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

**From:** Hendrick, Lindsey [hendrick.lindsey@epa.gov]  
**Sent:** 5/5/2020 5:50:10 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Crowley, Matthew [Crowley.Matthew@epa.gov]  
**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Tuesday, May 5, 2020 1:45 PM  
**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>  
**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>  
**Sent:** Tuesday, May 05, 2020 1:43 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>  
**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Tuesday, May 5, 2020 12:24 PM  
**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>  
**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Paisley-Jones, Claire  
**Sent:** Tuesday, May 05, 2020 12:23 PM  
**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew

<Crowley.Matthew@epa.gov>

**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

Claire

**From:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>

**Sent:** Monday, May 04, 2020 10:38 AM

**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>

**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Suarez, Mark <Suarez.Mark@epa.gov>

**Sent:** Monday, May 4, 2020 10:21 AM

**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>

**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>

**Sent:** Monday, May 04, 2020 9:51 AM

**To:** Crowley, Matthew <Crowley.Matthew@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>

**Subject:** Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

**From:** Hendrick, Lindsey [hendrick.lindsey@epa.gov]  
**Sent:** 5/5/2020 5:43:07 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Crowley, Matthew [Crowley.Matthew@epa.gov]  
**Subject:** RE: Usage data analysis plans for review  
**Attachments:** Last script run\_Helen.docx; Project Normal 002 Helen.pptx

## Ex. 5 Deliberative Process (DP)

---

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Tuesday, May 5, 2020 12:24 PM  
**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>  
**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

---

**From:** Paisley-Jones, Claire  
**Sent:** Tuesday, May 05, 2020 12:23 PM  
**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>  
**Subject:** RE: Usage data analysis plans for review

## Ex. 5 Deliberative Process (DP)

[https://tasks.office.com/usepa.onmicrosoft.com/Home/Task/medt2\\_fFLESB-8E6R5cRaYIACxmG?Type=TaskLink&Channel=Link&CreatedTime=637242888091040000](https://tasks.office.com/usepa.onmicrosoft.com/Home/Task/medt2_fFLESB-8E6R5cRaYIACxmG?Type=TaskLink&Channel=Link&CreatedTime=637242888091040000)

Claire

---

**From:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>  
**Sent:** Monday, May 04, 2020 10:38 AM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Usage data analysis plans for review

# Ex. 5 Deliberative Process (DP)

**From:** Suarez, Mark <Suarez.Mark@epa.gov>

**Sent:** Monday, May 4, 2020 10:21 AM

**To:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>

**Subject:** RE: Usage data analysis plans for review

# Ex. 5 Deliberative Process (DP)

Mark

**From:** Hendrick, Lindsey <hendrick.lindsey@epa.gov>

**Sent:** Monday, May 04, 2020 9:51 AM

**To:** Crowley, Matthew <Crowley.Matthew@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>

**Subject:** Usage data analysis plans for review

# Ex. 5 Deliberative Process (DP)

```

x<- dataset$variable

h <- hist(x, breaks = 10, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT fungicides"
)

h <- hist(x, breaks = 10, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT insecticides",
  xlim = c(-20, 20))

mean.x = mean(x)
sd.x = sd(x)

se.x = sd(x) /sqrt(length(x))

xfit<-seq(min(x), max(x), length=400)
yfit<-dnorm(xfit, mean=mean(x), sd=sd(x))
yfit <- yfit*diff(h$mids[1:2])*length(x)
lines(xfit, yfit, col = "blue", lwd =2)

abline(v = mean(x),
  col = "red",
  lwd = 2)

abline(v = 2 * sd(x),
  col = "blue",
  lwd = 1)

abline(v = -2 * sd(x),
  col = "blue",
  lwd = 1)

h <- hist(x, breaks = 15, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT herbicides for cotton 2007-2017"
)

h <- hist(x, breaks = 10, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT herbicides for cotton 2007-2017",
  xlim = c(-80, 80))

h <- hist(x, breaks = 10, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT fungicides for apples",
  xlim= c(-70, 70))

h <- hist(x, breaks = 15, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT insecticides for soybeans 2005-2018",
  xlim = c(-40, 40)
)

h <- hist(x, breaks = 20, col ="grey", xlab = "NASS PCT - Kynetec PCT",
  main = "Difference between NASS PCT and Kynetec PCT herbicides for soybeans 2005-2018",
  xlim = c(-60, 60)
)

```

\* loaded xcel file that has all the data and then filtered to only the chemical classes wanted

```
fungicide = filter(apples_all, Domain == "FUNGICIDE")
herbicide = filter(apples_all, Domain == "HERBICIDE")
insecticide = filter(apples_all, Domain == "INSECTICIDE")
```

```
h <- hist(x, breaks = 15, col = "grey", xlab = "NASS PCT - Kynetec PCT",
main = "Difference between NASS PCT and Kynetec PCT herbicides for apples")
```

```
h <- hist(x, breaks = 10, col = "grey", xlab = "NASS PCT - Kynetec PCT",
main = "Difference between NASS PCT and Kynetec PCT herbicides for apples",
xlim = c(-60, 60))
```

```
fungicide = filter(strawberries_all, Domain == "FUNGICIDE")
herbicide = filter(strawberries_all, Domain == "HERBICIDE")
insecticide = filter(strawberries_all, Domain == "INSECTICIDE")
```

```
x<-strawfungicide$Diff_PCT
h <- hist(x, breaks = 15, col = "grey", xlab = "NASS PCT - Kynetec PCT",
main = "Difference between NASS PCT and Kynetec PCT insecticides in strawberries")
```

```
h <- hist(x, breaks = 15, col = "grey", xlab = "NASS PCT - Kynetec PCT",
main = "Difference between NASS PCT and Kynetec PCT insecticides in strawberries",
xlim = c(-100, 100))
```

```
mean.x = mean(x)
sd.x = sd(x)
```

```
se.x = sd(x) /sqrt(length(x))
```

```
xfit<-seq(min(x), max(x), length=200)
yfit<-dnorm(xfit, mean=mean(x), sd=sd(x))
yfit <- yfit*diff(h$mids[1:2])*length(x)
lines(xfit, yfit, col = "blue", lwd =2)
```

```
abline(v = mean(x),
col = "red",
lwd = 2)
```

```
abline(v = 2 * sd(x),
col = "blue",
lwd = 1)
```

```
abline(v = -2 * sd(x),
col = "blue",
lwd = 1)
```

```
strawfungicide = filter(strawberries_all, Domain == "FUNGICIDE")
```



```

strawherbicide = filter(strawberries_all, Domain == "HERBICIDE")
strawinsecticide = filter(strawberries_all, Domain == "INSECTICIDE")

plot(insecticide$BAT_KNT, insecticide$BAT_NASS, xlab = "Kynetec area treated", ylab = "NASS area treated",
main = "Correlation of NASS and Kynetec data for soybeans treated with insecticides")

abline(lm(BAT_NASS ~ BAT_KNT, data=insecticide), col = 'red')

x<- soybean.fungicide.2005.2018$BAT_NASS
y<- soybean.fungicide.2005.2018$BAT_KNT

x<- soybean.herbicide.2005.2018$BAT_NASS
y<- soybean.herbicide.2005.2018$BAT_KNT

x<- soybean.insecticide.2005.2018$BAT_NASS
y<- soybean.insecticide.2005.2018$BAT_KNT

x<-cotton.2007.2017.herbicides$BAT_NASS
y<-cotton.2007.2017.herbicides$BAT_KY

x<-cotton.2007.2017.insecticides$BAT_NASS
y<-cotton.2007.2017.insecticides$BAT_KY

x <-corn.2005.2018.fungicides$BAT_NASS
y<- corn.2005.2018.fungicides$BAT_KY

x <-corn.2005.2018.herbicides$BAT_NASS
y<- corn.2005.2018.herbicides$BAT_KY

x <-corn.2005.2018.insecticides$BAT_NASS
y<- corn.2005.2018.insecticides$BAT_KY

cor(x, y, method = c("pearson"))
cor.test (x,y, method=c("pearson"))

fungicide = filter(apples_all, Domain == "FUNGICIDE")
herbicide = filter(apples_all, Domain == "HERBICIDE")
insecticide = filter(apples_all, Domain == "INSECTICIDE")

fungicide = filter(strawberries_all, Domain == "FUNGICIDE")
herbicide = filter(strawberries_all, Domain == "HERBICIDE")
insecticide = filter(strawberries_all, Domain == "INSECTICIDE")

plot(herbicide$BAT_NASS, herbicide$BAT_KY, xlab = "NASS BAT", ylab = "Kynetec BAT", main =
"Correlation Of NASS and Kynetec Base Acres Treated with herbicide in corn")

abline(lm(herbicide$BAT_KY ~ herbicide$BAT_NASS), col = 'red')

```

Message

---

**From:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Sent:** 6/30/2020 2:42:37 PM  
**To:** OPP Usage and Label Use Team [OPP\_Usage\_and\_Label\_Use\_Team@epa.gov]  
**Subject:** FW: atrazine and simazine non-ag PCTs

FYI

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Sent:** Thursday, June 25, 2020 12:52 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Otte, Briana <otte.briana@epa.gov>; Crowley, Matthew <Crowley.Matthew@epa.gov>  
**Cc:** Anderson, Brian <Anderson.Brian@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Kyle, Lee <Kyle.Lee@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Farruggia, Frank <Farruggia.Frank@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Sinnathamby, Sumathy <sinnathamby.sumathy@epa.gov>; Muela, Stephen <muela.stephen@epa.gov>; Hafner, Sarah <hafner.sarah@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** atrazine and simazine non-ag PCTs

BEAD Team,

## Ex. 5 Deliberative Process (DP)

Moving forward other for chemicals, if this information is available we will use it. But if the information is not available we can fall back on the estimates based on pound applied, the different label rates, and acres from the UDLs.

We're going to finalize the chemical specific inputs for the atrazine, simazine and propazine spatial analysis, including these aggregated PCTs, over the next couple of days. If you have any concerns let me know.

Thank you for your feedback!

Jen

\*\*\*\*\*

Jennifer Connolly, Senior Scientist  
Environmental Information Support Branch

Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: connolly.jennifer@epa.gov

\*\*\*\*\*

Message

---

**From:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Sent:** 9/17/2019 12:58:41 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: CLA comments

Attach them to the 10 am on Monday.

## Ex. 5 Deliberative Process (DP)

Thanks,  
Mark

---

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Monday, September 16, 2019 3:28 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: CLA comments

I'd probably want to clean up my notes in the document a bit, to make sure someone other than me can follow them. Maybe I can do that while I'm listening to the FWS webinar. What meeting invite should I attach it to?

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Monday, September 16, 2019 3:20 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: CLA comments

That was the plan. But, the PCA/PCT team wants to address the comments before they put their document out. So, we need to have an abbreviated piece that explains why we didn't incorporate their suggestions.

That's great, if your notes are in the document, can you put it in SharePoint and attach a link to the meeting invitation? Lindsey and Briana can work from that document.

---

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Monday, September 16, 2019 3:16 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: CLA comments

Ok. I thought we were handling all the entire response to comment together as a team.

I have my notes on the document. Is there a format we're using? Should we meet again to go over them? How do you want to handle this?

Claire

---

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Monday, September 16, 2019 3:14 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: CLA comments

We need to write up a detail response.

---

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Monday, September 16, 2019 3:11 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: CLA comments

I'm kind of confused. I thought we went over our comments in the esa group meeting last week (where I was only able to come to half)... am I supposed to be doing something else right now?

---

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Monday, September 16, 2019 3:08 PM  
**To:** Otte, Briana <otte.briana@epa.gov>; Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** CLA comments

All,

Timeline change! Due to the way that the PCA/PCT group is putting together their documents, we need to reprioritize the review of the CLA comments. We need to have the document reviewed and some preliminary conclusions by early next week.

I will put something on the calendar to discuss the comments in detail.

Regards,  
Mark

Mark Suarez  
Acting Chief  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Connolly, Jennifer [Connolly.Jennifer@epa.gov]  
**Sent:** 6/18/2020 10:46:28 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]; Otte, Briana [otte.briana@epa.gov]  
**Subject:** RE: For Review: Propazine aggregated PCTs

All,

I wanted to let you know that we plan to run the spatial analysis for propazine next Tuesday. If you have any remaining feedback if you could let me know my COB Monday. I'm compressed tomorrow, but if you questions that need to be discussed we can do that on Monday.

Also, as you look at atrazine and simazine, if you have questions, or need help getting oriented to the spreadsheets let me know. I'm happy to set up a skype meeting so we can do a screen share.

Jen

---

**From:** Connolly, Jennifer  
**Sent:** Thursday, June 4, 2020 9:03 AM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Otte, Briana <otte.briana@epa.gov>  
**Cc:** Farruggia, Frank <Farruggia.Frank@epa.gov>; Kiernan, Brian <Kiernan.Brian@epa.gov>; Crews, Kristy <Crews.Kristy@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Wait, Monica <Wait.Monica@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Muela, Stephen <muela.stephen@epa.gov>; Sinnathamby, Sumathy <sinnathamby.sumathy@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Kyle, Lee <Kyle.Lee@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
**Subject:** For Review: Propazine aggregated PCTs

Hi BEAD team,

I've attached the propazine aggregated PCTs for your review. These are on the ESA SharePoint site. If you there is anyone that needs access to the site not on this email let me know.

In the Excel file the UsageTable\_PCTs\_wSurrogates tab is the input table used to generated the aggregated PCTs. This is the table you likely want to spend the most time with.

The table includes the crops/PCTs from the SUUM, supplemented with crop information from the Census of Ag for crops found in the UDL but not on the SUUM, and the surrogate PCTs for un-surveyed state/crops. The other tabs in this workbook preceding this table include the materials used to generated the table. The crosswalk between the Census of Ag, SUUM and UDLs is available as a stand-alone. I find the full table to be overwhelming at times. The last tab in the workbook is the presence/absence table for propazine.

The resulting aggregated PCTs are also attached as individual spreadsheets.

In these tables I used 2.5% as the floor for the PCT. This was used if a state was surveyed but no usage reported or if the usage values was below 2.5. For crops that aren't registered 0's are used for the PCTs. If a crop is not grown per the Census and there isn't information in the SUUM I left the PCT as 0. We had discussed using 2.5, but when I multiply the result would be 0. If you have thoughts or feedback on any of these assumption let me know.

The states where the area of sorghum is undisclosed include, Connecticut, Maine, Massachusetts, Nevada, New Hampshire, and Washington.

If you can provide feedback by COB next Thursday 6/11 that would be great. Let me know if you have any question as review. We can probably use some of the time during the meeting next Tuesday for questions if that is helpful.

Thank you!

Jen

\*\*\*\*\*

Jennifer Connolly, Senior Scientist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: connolly.jennifer@epa.gov

\*\*\*\*\*

Message

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**From:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Sent:** 5/30/2019 6:38:22 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

Thanks Claire!!

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Paisley-Jones, Claire  
**Sent:** Thursday, May 30, 2019 2:37 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

A few comments.

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**From:** Doucoure, Cynthia  
**Sent:** Wednesday, May 29, 2019 3:17 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

Hi Mark/Claire,

I've completed the update of the Bromoxynil SUUM. Please see both the Excel sheet with SUUM data and the memo. Let me know if you have any questions. Please note that I used Kynetec data for crops grown in CA except where Kynetec did not have usage data. Let me know if you have any questions.

Thanks,

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)



Thanks,  
Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA Als) for your review

Hi Mark/Claire,

I'm attaching the Bromoxynil SUUM for your review with the understanding that the time period remains the same (2012-2016) and that I'm still reviewing the PCT data. See responses in blue font below to your comments.

I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** ESA Als

Cynthia,  
Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

**As background: we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.**

**The prometryn SUUM uses the phrase "not surveyed" and "not surveyed at state level" in table 2. Can these be interpreted to mean the same thing as "not surveyed at national level"? Yes in most of these cases but not always; some crops may not be surveyed nationally but may have CA data (i.e. cilantro).**

**For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate "not surveyed at national level" for these uses? These uses are extracted as "premises/areas" in the PLUS reports. I added both terms in the SUUM to make it clearer.**

**Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I've corrected the barley in WA and the alfalfa data. I'm now reviewing the PCT averages for all crops using our agreed upon method.**

Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

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**From:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Sent:** 5/29/2019 7:17:07 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review  
**Attachments:** Bromoxynil SUUM.Udate.2019.docx; Bromoxynil SUUM Data Update\_May2019.xlsx

**Flag:** Follow up

Hi Mark/Claire,

I've completed the update of the Bromoxynil SUUM. Please see both the Excel sheet with SUUM data and the memo. Let me know if you have any questions. Please note that I used Kynetec data for crops grown in CA except where Kynetec did not have usage data. Let me know if you have any questions.

Thanks,

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)

Thanks,

Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I'm attaching the Bromoxynil SUUM for your review with the understanding that the time period remains the same (2012-2016) and that I'm still reviewing the PCT data. See responses in blue font below to your comments.

I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency

OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** ESA Als

Cynthia,

Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

**As background: we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.**

**The prometryn SUUM uses the phrase “not surveyed” and “not surveyed at state level” in table 2. Can these be interpreted to mean the same thing as “not surveyed at national level”? Yes in most of these cases but not always; some crops may not be surveyed nationally but may have CA data (i.e. cilantro).**

**For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate “not surveyed at national level” for these uses? These uses are extracted as “premises/areas” in the PLUS reports. I added both terms in the SUUM to make it clearer.**

**Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I’ve corrected the barley in WA and the alfalfa data. I’m now reviewing the PCT averages for all crops using our agreed upon method.**

Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

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**From:** Crowley, Matthew [Crowley.Matthew@epa.gov]  
**Sent:** 5/7/2020 11:45:06 AM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**CC:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]; Otte, Briana [otte.briana@epa.gov]  
**Subject:** Upcoming ESA work w/EFED on herbicides (triazines and glyphosate)  
  
**Flag:** Follow up

# Ex. 5 Deliberative Process (DP)

Matthew Crowley, Acting Branch Chief  
Science Information and Analysis Branch (SIAB)  
EPA/OCSP/OPP/BEAD  
703-305-7606

**From:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Sent:** 5/21/2020 4:30:40 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Sorghum - Propazine

**Flag:** Follow up

## Ex. 5 Deliberative Process (DP)

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Wednesday, May 20, 2020 1:49 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** FW: Sorghum - Propazine

## Ex. 5 Deliberative Process (DP)

As an example for sorghum syrup:

- Iowa is (D) in 2002, 2012, and 2017. In 2007 it's 8 acres.
- Maryland is (D) in 2012, and not present in the three other years
- South Carolina is (D) in 2012, and 10 acres in 2002 and 2017, and 16 acres in 2007
- Vermont is (D) in 2012 and 2017 and not present in the other two years.

I'm attaching the four years of census data for sorghum. What do you think?

Claire

**From:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Sent:** Tuesday, May 19, 2020 10:16 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** Sorghum - Propazine

Hey Claire,

I've attached the states where sorghum has undisclosed acres or an indication that it is not grown. The states in the lower 48 where all three CoA sorghum crops don't report acres are highlighted in orange. We don't need to deal with the NL48 yet, we'll wait until we hear back from PRD.

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

I'm going to update the aggregate PCTs based on the conversation today. Once we decided what to use for the state crop acres for the state in orange I can get you that information you and others in BEAD to review.

Feel free to forward this to others. The table is on the ESA SharePoint site so if you need me to add them to the site so they have access to the table let me know.

Jen

\*\*\*\*\*

Jennifer Connolly, Senior Scientist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: connolly.jennifer@epa.gov


\*\*\*\*\*

Message

**From:** Connolly, Jennifer [Connolly.Jennifer@epa.gov]  
**Sent:** 5/20/2020 2:16:04 AM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]; Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**Subject:** Sorghum - Propazine

<!--[if lte mso 15 || CheckWebRef]-->

Connolly, Jennifer has shared a OneDrive for Business file with you. To view it, click the link below.

 Sorgham\_NotGrown\_Undisclosed\_v1.xlsx

<!--[endif]-->

Hey Claire,

I've attached the states where sorghum has undisclosed acres or an indication that it is not grown. The states in the lower 48 where all three CoA sorghum crops don't report acres are highlighted in orange. We don't need to deal with the NL48 yet, we'll wait until we hear back from PRD. **Ex. 5 Deliberative Process (DP)**

## Ex. 5 Deliberative Process (DP)

I'm going to update the aggregate PCTs based on the conversation today. Once we decided what to use for the state crop acres for the state in orange I can get you that information you and others in BEAD to review.

Feel free to forward this to others. The table is on the ESA SharePoint site so if you need me to add them to the site so they have access to the table let me know.

Jen

\*\*\*\*\*

Jennifer Connolly, Senior Scientist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: [connolly.jennifer@epa.gov](mailto:connolly.jennifer@epa.gov)

\*\*\*\*\*



Message


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**From:** Connolly, Jennifer [Connolly.Jennifer@epa.gov]  
**Sent:** 2/20/2020 4:32:26 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: For Review- Methomyl usage appendices

**Flag:** Follow up

<!--[if lte mso 15 || CheckWebRef]-->

Connolly, Jennifer has shared OneDrive for Business files with you. To view them, click the links below.

 Carbaryl\_usage\_HI-PR\_method\_Feb2020.docx

 carbaryl\_CONUS\_usage\_\_method\_(draft).docx

 methomyl\_CONUS\_usage\_\_method\_Feb\_2020(draft).docx

 Methomyl\_usage\_HI-PR\_method\_Feb\_2020(draft).docx

<!--[endif]-->

Here you go! They are on the ESA SharePoint, if you have any issues accessing the documents let me know. I can send you hard copies.

## Ex. 5 Deliberative Process (DP)

Jen

---

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Thursday, February 20, 2020 11:12 AM  
**To:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Subject:** RE: For Review- Methomyl usage appendices

Hey Jen,

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>

**Sent:** Thursday, February 13, 2020 9:36 AM

**To:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>

**Cc:** Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Blankinship, Amy <[Blankinship.Amy@epa.gov](mailto:Blankinship.Amy@epa.gov)>; Holmes, Jean <[Holmes.Jean@epa.gov](mailto:Holmes.Jean@epa.gov)>

**Subject:** RE: For Review- Methomyl usage appendices

Thanks Jen!

---

**From:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>

**Sent:** Thursday, February 13, 2020 9:33 AM

**To:** Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>

**Cc:** Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Blankinship, Amy <[Blankinship.Amy@epa.gov](mailto:Blankinship.Amy@epa.gov)>; Holmes, Jean <[Holmes.Jean@epa.gov](mailto:Holmes.Jean@epa.gov)>

**Subject:** For Review- Methomyl usage appendices

Mark, Claire and Brian,

I've attached the methomyl usage appendices for your review. There is one for the contiguous United States and one for the NL48. If you can please send us your feedback by next Thursday, 2/20.

We will be sending the carbaryl appendices later today and will be asking for comments by next Thursday as well.

Jen

\*\*\*\*\*

Jennifer Connolly, GIS Biologist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: [connolly.jennifer@epa.gov](mailto:connolly.jennifer@epa.gov)

\*\*\*\*\*

Message

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**From:** Atwood, Donald [Atwood.Donald@epa.gov]  
**Sent:** 1/10/2018 1:29:47 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** FW: Are you in today?

Here is the EFED response to my email yesterday describing why they are requesting the additional Tables.

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088  
atwood.donald@epa.gov

---

**From:** Garber, Kristina  
**Sent:** Wednesday, January 10, 2018 8:24 AM  
**To:** Atwood, Donald <Atwood.Donald@epa.gov>  
**Cc:** Panger, Melissa <Panger.Melissa@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Orrick, Greg <Orrick.Greg@epa.gov>  
**Subject:** RE: Are you in today?

Hi Don,

We are asking for data in a specific format so that we can use the data as part of a GIS analysis that considers usage in combination with potential use sites as defined by USDA's crop data layer landcovers for agriculture. This is most

## Ex. 5 Deliberative Process (DP)

Let me know if you have any follow up questions. I'm working at home today and can be reached **Ex. 6 Personal Privacy (PP)**

Thanks,  
Kris

---

**From:** Panger, Melissa  
**Sent:** Tuesday, January 09, 2018 1:34 PM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Subject:** FW: Are you in today?

FYI...

---

**From:** Atwood, Donald  
**Sent:** Tuesday, January 09, 2018 12:38 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>  
**Cc:** Sims, Diann <Sims.Diann@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Are you in today?

# Ex. 5 Deliberative Process (DP)

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088  
[atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

---

**From:** Panger, Melissa  
**Sent:** Tuesday, January 09, 2018 12:17 PM  
**To:** Orrick, Greg <[Orrick.Greg@epa.gov](mailto:Orrick.Greg@epa.gov)>; Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>  
**Cc:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>  
**Subject:** RE: Are you in today?

Thanks, Don, for the heads up. Do you have a sense on how the timelines might change with the new tables? That would be useful information to have now and then we can all touch base when Kris gets back into the office.

Thanks!  
Melissa

---

Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

---

**From:** Orrick, Greg  
**Sent:** Tuesday, January 09, 2018 10:54 AM  
**To:** Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>  
**Cc:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>  
**Subject:** RE: Are you in today?

Hi Don,

Thank you for the clarification. I'm copying Melissa Panger since she is involved with the ESA work and I am not familiar with what SUUM refinements were requested.

Best regards,

Greg

---

**From:** Atwood, Donald  
**Sent:** Tuesday, January 09, 2018 10:32 AM  
**To:** Orrick, Greg <[Orrick.Greg@epa.gov](mailto:Orrick.Greg@epa.gov)>  
**Cc:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Are you in today?

## Ex. 5 Deliberative Process (DP)

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088  
[atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

---

**From:** Orrick, Greg  
**Sent:** Tuesday, January 09, 2018 9:41 AM  
**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>  
**Cc:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>  
**Subject:** RE: Are you in today?

Hello,

**Ex. 6 Personal Privacy (PP)** I apologize I'm not catching on to the issue at hand. Are you referring to a specific request regarding a specific a.i.?

Thank you,  
Greg

GREGORY ORRICK | ENVIRONMENTAL SCIENTIST | U.S. EPA, OFFICE OF PESTICIDE PROGRAMS | PHONE: 703.305.6140

---

**From:** Paisley-Jones, Claire  
**Sent:** Tuesday, January 09, 2018 9:37 AM  
**To:** Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; Orrick, Greg <[Orrick.Greg@epa.gov](mailto:Orrick.Greg@epa.gov)>  
**Cc:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>  
**Subject:** RE: Are you in today?

I agree!!!

---

**From:** Atwood, Donald  
**Sent:** Tuesday, January 09, 2018 8:23 AM  
**To:** Orrick, Greg <[Orrick.Greg@epa.gov](mailto:Orrick.Greg@epa.gov)>  
**Cc:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** Are you in today?

We really need to talk about the additional data sets being requested for the Extended SUUM Reports.

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088

[atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

Message

---

**From:** Corbin, Mark [Corbin.Mark@epa.gov]  
**Sent:** 11/6/2019 4:25:19 PM  
**To:** Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]; Antoline, Joshua [antoline.joshua@epa.gov]; Arnold, Elyssa [Arnold.Elyssa@epa.gov]; Milians, Karen [Milians.Karen@epa.gov]; Eckel, William [Eckel.William@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**Subject:** RE: PCA/PCT Team Meeting

Sounds good and thanks for the heads up. Josh, we need to make sure the White Paper touches on this also. Doesn't have to be exhaustive, just acknowledge what the issue is and how we plan to address it conceptually

mark

---

**From:** Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Sent:** Wednesday, November 06, 2019 11:20 AM  
**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
**Subject:** RE: PCA/PCT Team Meeting

Mark,

## Ex. 5 Deliberative Process (DP)

Rochelle

---

**From:** Corbin, Mark <Corbin.Mark@epa.gov>  
**Sent:** Wednesday, November 6, 2019 10:55 AM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Team Meeting

Looking good and coming together nicely.

## Ex. 5 Deliberative Process (DP)

Let me know when you have a clean draft for me to review

mark

---

**From:** Antoline, Joshua <[antoline.joshua@epa.gov](mailto:antoline.joshua@epa.gov)>

**Sent:** Tuesday, November 05, 2019 9:24 PM

**To:** Arnold, Elyssa <[Arnold.Elyssa@epa.gov](mailto:Arnold.Elyssa@epa.gov)>; Corbin, Mark <[Corbin.Mark@epa.gov](mailto:Corbin.Mark@epa.gov)>; Milians, Karen <[Milians.Karen@epa.gov](mailto:Milians.Karen@epa.gov)>; Eckel, William <[Eckel.William@epa.gov](mailto:Eckel.William@epa.gov)>; Holmes, Jean <[Holmes.Jean@epa.gov](mailto:Holmes.Jean@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Spatz, Dana <[Spatz.Dana@epa.gov](mailto:Spatz.Dana@epa.gov)>; Bohaty, Rochelle <[Bohaty.Rochelle@epa.gov](mailto:Bohaty.Rochelle@epa.gov)>

**Subject:** Re: PCA/PCT Team Meeting

# Ex. 5 Deliberative Process (DP)

Josh

---

**From:** Arnold, Elyssa <[Arnold.Elyssa@epa.gov](mailto:Arnold.Elyssa@epa.gov)>

**Sent:** Tuesday, November 5, 2019 9:31 AM

**To:** Corbin, Mark <[Corbin.Mark@epa.gov](mailto:Corbin.Mark@epa.gov)>; Milians, Karen <[Milians.Karen@epa.gov](mailto:Milians.Karen@epa.gov)>; Antoline, Joshua <[antoline.joshua@epa.gov](mailto:antoline.joshua@epa.gov)>; Eckel, William <[Eckel.William@epa.gov](mailto:Eckel.William@epa.gov)>; Holmes, Jean <[Holmes.Jean@epa.gov](mailto:Holmes.Jean@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Spatz, Dana <[Spatz.Dana@epa.gov](mailto:Spatz.Dana@epa.gov)>; Bohaty, Rochelle <[Bohaty.Rochelle@epa.gov](mailto:Bohaty.Rochelle@epa.gov)>

**Subject:** PCA/PCT Team Meeting

## PCA/PCT Team Meeting Notes

**November 5, 2019**

Attendees: Mark C., Mark S., Bill, Josh, Elyssa, Rochelle (phone), Karen (phone)

### White Paper Comments

- Josh is working on revisions based on Jan, Dana, and BEAD comments
  - Mostly done with Jan and Dana
  - Working on BEAD's now
  - Karen is available today too – will coordinate with Josh
- Questions on the Evaluation section
  - Mark talked to Jan to clarify our use of monitoring data
  - Will add language to clarify the purpose of using monitoring data in this case (short paragraph) – Mark will help with this
- BEAD Comments
  - Total acres treated vs. base acres treated – discussion in comments
  - ESA – will now use “aggregated base acres treated” – we will be consistent with that
- Josh will be done by COB Wednesday
- Mark and Bill will review on Thursday
- Aim to share the revised version with Jan COB Thursday



## Case Study

- Josh will model the PCA section of the White Paper on the structure of the PCA steps in the Case Study, so need to make sure we are all in agreement on that
- Bill would like to meet separately to discuss the Case Study comments – Rochelle is free tomorrow at 10:00
  - Will make a revision plan after that (by email) and then will update the IO

---

Elyssa Arnold, Risk Assessment Process Leader  
Environmental Risk Branch 2  
Environmental Fate & Effects Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
(703) 347-0236  
[arnold.elyssa@epa.gov](mailto:arnold.elyssa@epa.gov)

Message

---

**From:** Corbin, Mark [Corbin.Mark@epa.gov]  
**Sent:** 11/6/2019 12:41:16 PM  
**To:** Antoline, Joshua [antoline.joshua@epa.gov]; Arnold, Elyssa [Arnold.Elyssa@epa.gov]; Milians, Karen [Milians.Karen@epa.gov]; Eckel, William [Eckel.William@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]; Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]  
**Subject:** RE: PCA/PCT Team Meeting  
  
**Flag:** Follow up

We have all morning session on ELMS but if others can look it over this morning I will try and find time this afternoon

Thanks for pushing that through so fast

mark

---

**From:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Sent:** Tuesday, November 05, 2019 9:24 PM  
**To:** Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** Re: PCA/PCT Team Meeting

## Ex. 5 Deliberative Process (DP)

Josh

---

**From:** Arnold, Elyssa <Arnold.Elyssa@epa.gov>  
**Sent:** Tuesday, November 5, 2019 9:31 AM  
**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** PCA/PCT Team Meeting

### PCA/PCT Team Meeting Notes

November 5, 2019

Attendees: Mark C., Mark S., Bill, Josh, Elyssa, Rochelle (phone), Karen (phone)

### White Paper Comments

- Josh is working on revisions based on Jan, Dana, and BEAD comments
  - Mostly done with Jan and Dana

- Working on BEAD's now
  - Karen is available today too – will coordinate with Josh
- Questions on the Evaluation section
  - Mark talked to Jan to clarify our use of monitoring data
  - Will add language to clarify the purpose of using monitoring data in this case (short paragraph) – Mark will help with this
- BEAD Comments
  - Total acres treated vs. base acres treated – discussion in comments
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- Josh will model the PCA section of the White Paper on the structure of the PCA steps in the Case Study, so need to make sure we are all in agreement on that
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  - Will make a revision plan after that (by email) and then will update the IO

---

Elyssa Arnold, Risk Assessment Process Leader  
 Environmental Risk Branch 2  
 Environmental Fate & Effects Division  
 Office of Pesticide Programs  
 U.S. Environmental Protection Agency  
 (703) 347-0236  
[arnold.elyssa@epa.gov](mailto:arnold.elyssa@epa.gov)

**From:** Arnold, Elyssa [Arnold.Elyssa@epa.gov]  
**Sent:** 9/24/2019 3:02:09 PM  
**To:** Corbin, Mark [Corbin.Mark@epa.gov]; Milians, Karen [Milians.Karen@epa.gov]; Antoline, Joshua [antoline.joshua@epa.gov]; Eckel, William [Eckel.William@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]; Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]  
**Subject:** PCA/PCT Recurring Meeting - 9/24/19 Notes

## PCA/PCT Meeting

September 24, 2019

**Attendance:** Mark, Bill, Rochelle, Josh, Elyssa, Mark S., Claire, Karen

Action items in red

## White Paper

- Topics to make sure that we cover:
  - Need a section to address the CLA comments (big picture)
    - Uniform distribution vs. max distribution
    - Sub-county
  - PCA distribution – focus on describing percentiles of what passes and fails in each HUC2 rather than focusing on the mapping
    - Address non-delineated watersheds
    - Accounting for population size vs. PCAs – a potential line of evidence, should be discussed in the document
      - Can use data from SDWIS – Rochelle has found it to be reliable
  - Account for multiple use sites within a HUC2 for both PCA and PCT
  - PCAs – don't need to reiterate what we have in our current guidance, focus on taking what we have and expanding on it
    - Account for geographical separation within a HUC between cropped area and surface water sources?
  - Case Study
    - Chlorpyrifos – pick 1 HUC2 (e.g., cherries in MI)
    - Uses – cherries + vegetable – will require calculating a new PCA from the data (also crops are on different sides of the state)
    - Non-ag case study?
- General Outline:
  - Intro
  - PCA
    - History
    - Distributional Approach
    - Implications/meaning
  - PCT
    - History
    - PCT Approach
    - Implications/meaning
  - Other lines of evidence to consider (with consideration to the bright line in FQPA)
    - Uncertainties, strengths, and weaknesses
  - Case Study
- Review process
  - PCA/PCT Team
  - ESA Team
  - EFED & OPP Management (coordinate with Jan)

- By next Monday 9/30:
  - Put all sections together in one document
  - Make sure there is at least a placeholder for every section and topic needed
  - Bill to check the document regularly, focus on big picture
  - Mark S. and Claire to read through Friday/Monday – will let them know when it is ready for them
  - Mark C. will meet with Rochelle and Dana about the case study

**Meeting next week with Stone & REJV** (residential use) – to discuss their comments on ESA methods

- Oct 1, 10-12, 7100

#### ESA Team Coordination

- Elyssa will ask to touch base with the ESA Team at the 3:00 meeting on Thursday and will forward the invite to everyone

---

**From:** Arnold, Elyssa

**Sent:** Monday, September 16, 2019 12:41 PM

**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>

**Subject:** PCA/PCT Recurring Meeting - 9/16/19 Notes

#### PCA/PCT Meeting

**September 16, 2019**

**Attendance:** Bill, Jean, Rochelle, Josh, Elyssa, Mark S., Claire (phone), Karen (phone)

- White Paper Status
  - Mark shared Intro material and methods summary (adapted from ESA) in the meeting invite
  - Josh reformatted the flow chart
  - **Goal is to complete an initial draft by next Tuesday 9/24**
    - Highlight areas where we still have questions or need further input
  - Section 1 – Intro – Josh
    - Already started based on materials from Mark
  - Section 2 – PCAs – Karen
    - UDL layers based on same data set as PCA – should look at that for consistency with PCA section – see methods document that Mark shared
  - Section 3 – PCTs – Josh
  - Bill will support Karen and Josh as needed.
  - For now, will keep the 3 sections in 3 separate files on SharePoint. Josh sent around a link to the folder.
- Timeline
  - Contractor review scheduled to start first week of November
  - Aim to complete our draft by 10/8 (3 weeks) to allow time for internal EFED/OPP/OCSP review
- Need to coordinate with the ESA team to make sure everyone is on the same page
  - Would be good to have a meeting with the whole ESA team – see if we can do this at a Thursday ESA meeting – 9/26?
  - Invite Claire and Mark S. from BEAD
  - ESA team currently going through the public comments (Kris has a spreadsheet) – 2 relevant for us:
    - FESTF
    - CLA
- Contractor document – Marietta commented on the charge question regarding watersheds that are not delineated. She does not want open ended input on this. We will use what we have, question of distribution and percentile that we will use.

- USDA Presentation
  - Run through this afternoon at 2:30
  - Mark or Bill will present

---

Elyssa Arnold, Risk Assessment Process Leader  
Environmental Risk Branch 2  
Environmental Fate & Effects Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
(703) 347-0236  
[arnold.elyssa@epa.gov](mailto:arnold.elyssa@epa.gov)

-----Original Appointment-----

**From:** Corbin, Mark <[Corbin.Mark@epa.gov](mailto:Corbin.Mark@epa.gov)>

**Sent:** Wednesday, July 31, 2019 10:31 AM

**To:** Corbin, Mark; Milians, Karen; Antoline, Joshua; Eckel, William; Holmes, Jean; Arnold, Elyssa; Suarez, Mark; Paisley-Jones, Claire; Spatz, Dana; Bohaty, Rochelle

**Subject:** PCA/PCT Recurring Meeting

**When:** Monday, September 16, 2019 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** DCRoomPYS10671/Potomac-Yard-One

Attaching the final slide set for tomorrow's USDA Briefing. Reformatted and reorganized with Scenarios going first followed by PCA/PCT and then SAP summary

Main purpose for today was to start the transition to writing the White Paper. Ex. 6 Personal Privacy (PP)  
Ex. 6 Personal Privacy (PP) There is a walk through with Marietta and Jan this afternoon for the entire presentation and I have asked Bill to cover that and tomorrow's session with USDA. Sounds like it may get extended to 1.5 or 2 hours

For the White Paper I have attached a couple of pieces that were cobbled together from the contract document and a first cut at taking the ESA PCT write and making is generic for this effort. These can probably serve as starting points for the White Paper

Moving to Monday since we meet with USDA on Tuesday during our regular time slot. I want to go over logistics for the USDA meeting and to get started on the drafting of the White Paper and finalizing our Contractor questions

Call in for those on flexiplace

**Ex. 6 Personal Privacy (PP)**

Message

**From:** Corbin, Mark [Corbin.Mark@epa.gov]  
**Sent:** 9/4/2019 7:41:23 PM  
**To:** Eckel, William [Eckel.William@epa.gov]; Antoline, Joshua [antoline.joshua@epa.gov]; Milians, Karen [Milians.Karen@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Arnold, Elyssa [Arnold.Elyssa@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]; Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]  
**Subject:** RE: PCA/PCT Recurring Meeting  
**Flag:** Follow up

## Ex. 5 Deliberative Process (DP)

mark

**From:** Eckel, William <Eckel.William@epa.gov>  
**Sent:** Wednesday, September 04, 2019 1:51 PM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Recurring Meeting

## Ex. 5 Deliberative Process (DP)

**From:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Sent:** Wednesday, September 04, 2019 1:42 PM  
**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Recurring Meeting

## Ex. 5 Deliberative Process (DP)

**From:** Corbin, Mark <Corbin.Mark@epa.gov>  
**Sent:** Wednesday, September 4, 2019 11:07 AM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana

<Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>

**Subject:** RE: PCA/PCT Recurring Meeting

## Ex. 5 Deliberative Process (DP)

mark

**From:** Antoline, Joshua <antoline.joshua@epa.gov>

**Sent:** Wednesday, September 04, 2019 10:45 AM

**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Millians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>

**Subject:** RE: PCA/PCT Recurring Meeting

## Ex. 5 Deliberative Process (DP)

**From:** Corbin, Mark <Corbin.Mark@epa.gov>

**Sent:** Wednesday, September 4, 2019 10:13 AM

**To:** Milians, Karen <Millians.Karen@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>

**Subject:** PCA/PCT Recurring Meeting

## Ex. 5 Deliberative Process (DP)

See what you think and we can discuss further

Karen, have you had any luck with the GIS pictures for the slide set? If not, I can probably find some EISB help if you need it. Let me know

Mark Corbin  
Branch Chief, Environmental Risk Branch 6  
Environmental Fate and Effects Division (7507P)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
Washington DC 20460  
703-605-0033



Message

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**From:** Corbin, Mark [Corbin.Mark@epa.gov]  
**Sent:** 9/4/2019 3:39:53 PM  
**To:** Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]; Antoline, Joshua [antoline.joshua@epa.gov]; Milians, Karen [Milians.Karen@epa.gov]; Eckel, William [Eckel.William@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Arnold, Elyssa [Arnold.Elyssa@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**Subject:** RE: PCA/PCT Recurring Meeting

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mark

---

**From:** Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Sent:** Wednesday, September 04, 2019 11:13 AM  
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**Subject:** RE: PCA/PCT Recurring Meeting

Mark,

Thanks for sharing. It is always nice to have a visual to comment on.

I think the first page looks good and I like the simple approach/visual.

## Ex. 5 Deliberative Process (DP)

Let me know if my comments are not clear. I can stop by to discuss.

# Ex. 5 Deliberative Process (DP)

Rochelle

**From:** Corbin, Mark <Corbin.Mark@epa.gov>  
**Sent:** Wednesday, September 4, 2019 11:07 AM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Recurring Meeting

# Ex. 5 Deliberative Process (DP)

mark

**From:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Sent:** Wednesday, September 04, 2019 10:45 AM  
**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Recurring Meeting

# Ex. 5 Deliberative Process (DP)

**From:** Corbin, Mark <Corbin.Mark@epa.gov>  
**Sent:** Wednesday, September 4, 2019 10:13 AM  
**To:** Milians, Karen <Milians.Karen@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** PCA/PCT Recurring Meeting

After yesterday I took a stab at creating a flow chart of how I see the PCA and PCT parts of this effort aligning. It isn't pretty but I think it conveys what I think we are trying to do.

See what you think and we can discuss further

Karen, have you had any luck with the GIS pictures for the slide set? If not, I can probably find some EISB help if you need it. Let me know

Mark Corbin  
Branch Chief, Environmental Risk Branch 6  
Environmental Fate and Effects Division (7507P)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
Washington DC 20460  
703-605-0033

**From:** Antoline, Joshua [antoline.joshua@epa.gov]  
**Sent:** 9/12/2019 2:22:07 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Sub-state level pesticide usage data

## Ex. 5 Deliberative Process (DP)

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**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Thursday, September 12, 2019 10:07 AM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Subject:** RE: Sub-state level pesticide usage data

Hmm,

I'm not sure if we need to bother addressing it. Maybe leave that up to Mark and Mark?

Claire

---

**From:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Sent:** Thursday, September 12, 2019 7:26 AM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Sub-state level pesticide usage data

Thank you for the summary. Mostly I was hoping for a document to save you the trouble of having to write it all out, so I appreciate you taking the time.

## Ex. 5 Deliberative Process (DP)

Josh

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**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Wednesday, September 11, 2019 4:48 PM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Subject:** RE: Sub-state level pesticide usage data

I'm not sure where to find anything in writing just yet. But there will be when we're done with the response to comments.

## Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

The epest data is also based on lbs applied and label application rates. Our PCT calculations are based on base acres treated, which is directly recorded in the study. When calculating acres from lbs applied, using a max label rate actually results in a smaller area treated, so using the reported acres treated is more accurate and more conservative.

I don't think you'll get many questions about that from USDA, as they also have spoken with the vendor and are on the same page as us about sub-state data directly from the proprietary dataset.

Let me know if you need me to clarify any of that, or if you have any other questions,

### Claire Paisley-Jones

Biologist

Science and Information Analysis Branch

Biological and Economic Analysis Division

U.S. EPA/Office of Pesticide Programs

(703)-308-8070, PYS-9326

[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)

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DRAFT/INTERNAL/DELIBERATIVE ONLY, NOT TO BE SHARED UNLESS SPECIFICALLY AND EXPLICITLY STATED*

---

**From:** Antoline, Joshua <[antoline.joshua@epa.gov](mailto:antoline.joshua@epa.gov)>

**Sent:** Wednesday, September 11, 2019 9:59 AM

**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>

**Subject:** Sub-state level pesticide usage data

Hi Claire,

## Ex. 5 Deliberative Process (DP)

Joshua Antoline, PhD

Chemist, ERB IV

Environmental Fate and Effects Division

Office of Pesticide Programs

U.S. Environmental Protection Agency

(703) 347-0253

Message

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**From:** Corbin, Mark [Corbin.Mark@epa.gov]  
**Sent:** 8/1/2019 2:56:43 PM  
**To:** Antoline, Joshua [antoline.joshua@epa.gov]; Eckel, William [Eckel.William@epa.gov]; Milians, Karen [Milians.Karen@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Arnold, Elyssa [Arnold.Elyssa@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]; Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**CC:** Spatz, Dana [Spatz.Dana@epa.gov]; Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]  
**Subject:** RE: PCA/PCT Kickoff

It is except we will need to have a discussion about considering PCT values other than the maximum. Pretty sure the ESA approach is going to consider other assumptions. We should mirror that to the extent we can.

---

**From:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Sent:** Thursday, August 01, 2019 9:51 AM  
**To:** Eckel, William <Eckel.William@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Kickoff

## Ex. 5 Deliberative Process (DP)

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**From:** Eckel, William <Eckel.William@epa.gov>  
**Sent:** Thursday, August 1, 2019 9:15 AM  
**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Milians, Karen <Milians.Karen@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Spatz, Dana <Spatz.Dana@epa.gov>; Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Subject:** RE: PCA/PCT Kickoff

Hello all,

To serve as a discussion piece, I have drafted a flow diagram for a simple case of applying PCT data to a DWA. I'm interested to hear your thoughts.

Bill

-----Original Appointment-----

**From:** Corbin, Mark <Corbin.Mark@epa.gov>  
**Sent:** Tuesday, July 23, 2019 12:43 PM  
**To:** Corbin, Mark; Milians, Karen; Antoline, Joshua; Eckel, William; Holmes, Jean; Arnold, Elyssa; Suarez, Mark; Paisley-Jones, Claire  
**Cc:** Spatz, Dana; Bohaty, Rochelle

**Subject:** PCA/PCT Kickoff

**When:** Tuesday, July 30, 2019 2:30 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** DCRoomPYS10671/Potomac-Yard-One

Updating the Project Plan

**From:** Antoline, Joshua [antoline.joshua@epa.gov]  
**Sent:** 9/12/2019 2:22:07 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Subject:** RE: Sub-state level pesticide usage data

## Ex. 5 Deliberative Process (DP)

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**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Thursday, September 12, 2019 10:07 AM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Subject:** RE: Sub-state level pesticide usage data

Hmm,

I'm not sure if we need to bother addressing it. Maybe leave that up to Mark and Mark?

Claire

---

**From:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Sent:** Thursday, September 12, 2019 7:26 AM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Sub-state level pesticide usage data

Thank you for the summary. Mostly I was hoping for a document to save you the trouble of having to write it all out, so I appreciate you taking the time.

## Ex. 5 Deliberative Process (DP)

Josh

---

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Wednesday, September 11, 2019 4:48 PM  
**To:** Antoline, Joshua <antoline.joshua@epa.gov>  
**Subject:** RE: Sub-state level pesticide usage data

I'm not sure where to find anything in writing just yet. But there will be when we're done with the response to comments.

## Ex. 5 Deliberative Process (DP)



## Ex. 5 Deliberative Process (DP)

The epest data is also based on lbs applied and label application rates. Our PCT calculations are based on base acres treated, which is directly recorded in the study. When calculating acres from lbs applied, using a max label rate actually results in a smaller area treated, so using the reported acres treated is more accurate and more conservative.

I don't think you'll get many questions about that from USDA, as they also have spoken with the vendor and are on the same page as us about sub-state data directly from the proprietary dataset.

Let me know if you need me to clarify any of that, or if you have any other questions,

**Claire Paisley-Jones**

Biologist

Science and Information Analysis Branch

Biological and Economic Analysis Division

U.S. EPA/Office of Pesticide Programs

(703)-308-8070, PYS-9326

[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)

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DRAFT/INTERNAL/DELIBERATIVE ONLY, NOT TO BE SHARED UNLESS SPECIFICALLY AND EXPLICITLY STATED*

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**From:** Antoline, Joshua <[antoline.joshua@epa.gov](mailto:antoline.joshua@epa.gov)>

**Sent:** Wednesday, September 11, 2019 9:59 AM

**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>

**Subject:** Sub-state level pesticide usage data

Hi Claire,

## Ex. 5 Deliberative Process (DP)

Joshua Antoline, PhD

Chemist, ERB IV

Environmental Fate and Effects Division

Office of Pesticide Programs

U.S. Environmental Protection Agency

(703) 347-0253

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 9/3/2019 6:41:43 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: Need your help developing initial crop-related inputs for field scenarios

## Ex. 5 Deliberative Process (DP)

Did you want me to do anything with this? Or are we basically an FYI on this?

Claire

---

**From:** Kaul, Monisha <Kaul.Monisha@epa.gov>  
**Sent:** Tuesday, September 03, 2019 2:14 PM  
**To:** Becker, Jonathan <Becker.Jonathan@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Tindall, Kelly <tindall.kelly@epa.gov>; Kiely, Timothy <Kiely.Timothy@epa.gov>; Chism, William <Chism.Bill@epa.gov>  
**Subject:** FW: Need your help developing initial crop-related inputs for field scenarios

Hi all –

## Ex. 5 Deliberative Process (DP)

I also received draft slides for next week's DD briefing. Jonathan, let me know if you have any comments. We should be receiving one more slide deck from Mark C – which I will also send around. Bill/Kelly - this is an FYI – but any thoughts are welcome.

Tim – this is FYI

As background – I am adding meeting notes from the last BAB-EFED meetings:

### September 3, 2019

Lee, Mark C., Monisha

- Request for BEAD to review contract task order. Try to complete by end of this week. Mark/Claire reviewed earlier version.
- EFED will send all materials to USDA by 9/10 in advance of 9/17 meeting
- Jonathan will set up meeting with Nelson about the crop grouping spreading review.
- EFED will send slide decks for upcoming DD briefing. Both are being reviewed by Marietta now. DD briefing is 9/9.

### August 22, 2019

Lee (EFED), Monisha, Jonathan

Email from Lee Kyle, Aug 21: *We need your help developing initial crop-related inputs for the current generic agricultural cover classes USEPA OPP will use to develop field scenarios – corn, cotton, rice, soybeans, wheat, vegetables and ground fruit, grapes, citrus, other orchards, other grains, other row crops, other cultivated crops, and pasture/hay/forage. Since the critical crop-related inputs pertain to factors that impact the use of pesticides and subsequent fate/transport from*

*the field – such as significant differences in time of plant or harvest or extent of cover as it pertains to runoff (curve number) or erosion (particularly USLE C factor) – general crop groups provide sufficient, viable distinctions for the purpose of pesticide fate and transport modeling. For instance, it is more critical to distinguish between vegetable crops and orchards than between apple and peach orchards or tomatoes and peppers. Distinctions between these general groups can be made in future scenario development if specific management, soil, or environmental factors that would impact the management and transport of pesticides differ.*

Notes:

- BEAD suggests that the input from USDA should be for not only planting/harvest date but also for crop groupings and other crop specific inputs.
- BEAD will begin by reviewing EFED's crop grouping spreadsheet over next week.
- Keep Tim in the loop since this will involve consultation with OPMP.
- Mark Suarez has done some similar work (ESA). Include him. Jonathan will touch base with Mark.
- Jonathan will compile sources for planting dates.
- USDA meeting 9/17 - Sheryl, Teung, Clayton, Linda Abbott
  - BEAD has requested an invitation
- Lee indicated that Kimberly and Marietta requested a briefing on Sept 4. However, Nelson and Monisha are out until then, so the briefing may be moved.

Let me know if you have any questions.

Thanks,

Monisha

---

Monisha Kaul, Chief  
Biological Analysis Branch  
Biological and Economic Analysis Division  
Office of Pesticide Programs  
US Environmental Protection Agency  
703-308-0098

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---

**From:** Kyle, Lee <[Kyle.Lee@epa.gov](mailto:Kyle.Lee@epa.gov)>  
**Sent:** Thursday, August 29, 2019 4:05 PM  
**To:** Kaul, Monisha <[Kaul.Monisha@epa.gov](mailto:Kaul.Monisha@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>  
**Cc:** Thurman, Nelson <[Thurman.Nelson@epa.gov](mailto:Thurman.Nelson@epa.gov)>; Matuszko, Jan <[Matuszko.Jan@epa.gov](mailto:Matuszko.Jan@epa.gov)>  
**Subject:** RE: Need your help developing initial crop-related inputs for field scenarios

Hi Monisha,

I've attached our draft proposal for contract peer review for the scenarios project and the PCA/PCT project. We sent it to contracts yesterday, but we have some time before we need to finalize it.

Please take a look at the charge questions for each project to make sure we're in agreement. The Scenarios questions are very similar to the questions we worked on with you last year. They start on page 12.

Thanks. I hope you had a wonderful vacation!

Lee

---

**From:** Kyle, Lee  
**Sent:** Thursday, August 22, 2019 1:04 PM  
**To:** Kaul, Monisha <Kaul.Monisha@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>  
**Cc:** Nelson Thurman (Thurman.Nelson@epa.gov) <Thurman.Nelson@epa.gov>  
**Subject:** RE: Need your help developing initial crop-related inputs for field scenarios

Hi Monisha and Jonathan,

- Attached is the crop matrix spreadsheet I mentioned
- Jonathan, please review the curve number table (Table 1) in the Input Parameters document. We developed the groupings based largely on curve number
- You've both been invited to the DD briefing on the 4<sup>th</sup>. I'll ask them about finding another day since you'll be out next week
- I'll talk to Jan about inviting you to the USDA briefing on the 17<sup>th</sup>

Jonathan, as you suggested we will ask USDA if the groupings are sufficient for the purposes of the modeling effort, in addition to asking them to enter the planting dates.

Thanks!

Lee

---

**From:** Kyle, Lee  
**Sent:** Wednesday, August 21, 2019 4:33 PM  
**To:** Kaul, Monisha <Kaul.Monisha@epa.gov>  
**Subject:** FW: Need your help developing initial crop-related inputs for field scenarios

Hi Monisha,

Kimberly just informed me you'll be out all next week. If it's okay with you, Nelson and I can work with your staff/Jonathan on much of this next week.

I scheduled a quick check in with you tomorrow at noon.

Best,

Lee

---

**From:** Kyle, Lee  
**Sent:** Wednesday, August 21, 2019 4:04 PM  
**To:** Kaul, Monisha <Kaul.Monisha@epa.gov>  
**Cc:** Nelson Thurman (Thurman.Nelson@epa.gov) <Thurman.Nelson@epa.gov>  
**Subject:** Need your help developing initial crop-related inputs for field scenarios

Hi Monisha,

The PWC scenarios project you helped us with last year is one of three drinking water projects that OPP needs to complete in time to be used in next year's chlorpyrifos risk assessment.

We need your help developing initial crop-related inputs for the current generic agricultural cover classes USEPA OPP will use to develop field scenarios – corn, cotton, rice, soybeans, wheat, vegetables and ground fruit, grapes, citrus, other orchards, other grains, other row crops, other cultivated crops, and pasture/hay/forage. Since the critical crop-

related inputs pertain to factors that impact the use of pesticides and subsequent fate/transport from the field – such as significant differences in time of plant or harvest or extent of cover as it pertains to runoff (curve number) or erosion (particularly USLE C factor) – general crop groups provide sufficient, viable distinctions for the purpose of pesticide fate and transport modeling. For instance, it is more critical to distinguish between vegetable crops and orchards than between apple and peach orchards or tomatoes and peppers. Distinctions between these general groups can be made in future scenario development if specific management, soil, or environmental factors that would impact the management and transport of pesticides differ.

Marietta and Kimberly have tasked us with presenting our initial inputs to them on September 4th. This will help us prepare for a meeting we've got scheduled with USDA on the 17<sup>th</sup>. I wanted to give you a heads up on this, and can follow up with details next week.

Lee

---

**From:** Arnold, Elyssa <Arnold.Elyssa@epa.gov>

**Sent:** Tuesday, August 20, 2019 3:51 PM

**To:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>; Kyle, Lee <Kyle.Lee@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>

**Cc:** Thurman, Nelson <Thurman.Nelson@epa.gov>

**Subject:** Drinking Water Assessment Update - meeting notes 8/20

### **Drinking Water Projects Meeting Notes – Action items**

**August 20, 2019**

Attendance: Elyssa, Marietta, Jan, Mark, Dana, Nelson, Lee

#### **Contractor Peer Review**

- Jan talked to Brian Katz, confirmed that we will use a single vehicle. They are ready to go, just waiting on us.
- Performance Work Statement for PCT/PCA was reviewed by Josh, Bill, Nelson, Lee, Claire (?)
  - Mark will clean up (address Nelson's comments) and send to Anna tomorrow for review by noon on Friday (gave Anna a heads up already).
  - Marietta can review it on Friday afternoon and then Lee can send to LaTangila.
  - Mark or Lee will combine the PCA/PCT and Scenarios documents before sending to Marietta.

#### **Scenarios**

- Nelson sent Input Parameters document to Jan on Friday.
  - Jan will review by the first week in September (Nelson is at ACS next week)
- Methods document – still on schedule
  - Demo of batch runs to PFTTT on Wednesday
- Scenario grouping for chlorpyrifos
  - Nelson and Dirk are going to focus on uses/management factors that result in different pest management approaches
- Jan scheduled an EFED/BEAD DD briefing for 9/4
- Lee and Nelson will send something to Monisha this week to prepare her for the briefing

#### **PCA/PCT**

- Have been focusing on the contract document
- Will share the white paper outline by the end of next week for early feedback

## **Ex. 5 Deliberative Process (DP)**

#### **Monitoring**

- Team met with Anna this morning to work on refining the questions

- Adding a question on the case study challenges
- Removing redundancies
- White paper, case studies, framework, and SOP to OSCP for the docket next week.
  - Marietta wants to see a draft of the questions before signing the transmittal memo.
- Next week will work on finalizing the questions (Rochelle will be back)
  - Send Marietta the questions to share with Rick
  - Update Alex on the questions prior to posting

## USDA Briefing – Sept 17

- Outline
  - Intro/purpose of briefing slide
  - 3 projects (in AA briefing – slides attached)
  - Monitoring: 2-3 slides
    - Conclusions slide from AA briefing
    - Timeline
  - PCA/PCT: ~10 slides
    - Can use material from peer review document
    - PCA – 4-5 slides from previous briefings (Karen presented to PFTTT on TPTH – check if that assessment is public yet)
    - PCT – Kris has ESA slides we can modify
      - Industry has submitted comments for ESA PCT approach – contracted with Stone for malathion case study to get below state level – CLA presented to us (Mark S. was there). Marietta will send around CLA's comments.
      - Input we need from USDA – have something similar we prepared for BEAD to pull from
  - Scenarios: ~10 slides
    - Use same slides as previous briefings (EMPM?) to explain the concept
    - Input we need from USDA
- Aim to get Marietta draft slides by 9/3 for her general with Rick on 9/4 (if not possible then Marietta can use an outline)
- Elyssa will pull the slides together into one presentation
- Clean up slides and send to USDA by 9/10
- Send asks for scenarios dates to USDA by 9/10 – Need to write up the spreadsheet process clearly for their feedback – Lee and Nelson will follow up on whether someone else can help on this.

**Next week** – Dana, Nelson, and Elyssa will be out. Jan will leave the meeting on the calendar for Lee and Mark to talk about the contractor document if needed.

---

**From:** Arnold, Elyssa

**Sent:** Monday, August 12, 2019 3:56 PM

**To:** Matuszko, Jan <[Matuszko.Jan@epa.gov](mailto:Matuszko.Jan@epa.gov)>; Brian Anderson <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Echeverria, Marietta <[echeverria.marietta@epa.gov](mailto:echeverria.marietta@epa.gov)>; Kyle, Lee <[Kyle.Lee@epa.gov](mailto:Kyle.Lee@epa.gov)>; Corbin, Mark <[Corbin.Mark@epa.gov](mailto:Corbin.Mark@epa.gov)>; Spatz, Dana <[Spatz.Dana@epa.gov](mailto:Spatz.Dana@epa.gov)>

**Cc:** Thurman, Nelson <[Thurman.Nelson@epa.gov](mailto:Thurman.Nelson@epa.gov)>

**Subject:** Drinking Water Assessment Update - meeting notes 8/12

## Drinking Water Projects Meeting Notes – Action items August 12, 2019

Attendance: Elyssa, Marietta, Jan, Mark, Dana, Nelson

### Contractor Peer Review

- Mark updated the draft of the contractor statement of work from Lee with the PCA/PCT details – added to PCA/PCT folder on ERB6 SharePoint site

- Clarified that there will be 2 separate reviews on 2 timelines with one Task Order to minimize process and overhead
- Need to review the charge questions (these are fairly general right now) and expertise
- This week – review by Josh, Nelson, Claire (will discuss at PCA/PCT meeting tomorrow)
- Next week – review by Anna and Lee (both out this week)
- Jan will follow up on Lee’s email to LaTangila with Brian Katz to highlight our priorities

## Scenarios

- Input Parameters document – Team comments were due on Friday, Nelson will clean it up this week and send it to Jan for review
- Methods document – describes how inputs are processed and scenarios selected, what was done and why
  - Sept 19: First part will describe the methods, currently being written
  - Oct 15: Will include examples for corn and wheat – including generation and running of the scenarios
    - Previous runs for corn had curve numbers read backwards, currently fixing and testing
    - Corn will be done before wheat
- Overall Executive Summary needed in plain language
- Chlorpyrifos scenarios – Nelson sent an edited version of Rochelle’s list before the meeting with the status for each crop/scenario (one typo – grapes will be separate from orchards)
  - Scenario Grouping (e.g., generic orchard, vineyard, vegetable) – will be charge questions for peer review; we will also ask for input from USDA
    - BEAD input – Lee will talk to Monisha next week and send her the list of scenarios. We will have a DD briefing with Kimberly before the USDA meeting to make sure EFED and BEAD are on the same page. Jan will get a DD briefing on the calendar first week in Sept.
  - Planting dates
    - Perennials
      - Rick had a generic proposal
      - Another idea – can we use bud or beginning bloom as a proxy for “emergence”?
      - Need to get USDA input
    - Annuals
      - Need USDA input on the method for filling in planting dates for state/crop combinations not covered in the Planting and Harvesting Guides (Rick’s method – has been shared with BEAD)
      - USDA could do additional work on this beyond the top 16 (e.g., vegetables) instead of PFTTT. Scenarios could be ready to process within a couple weeks after getting the dates. Could be ready for Rochelle to run 1-2 months after getting dates.
    - Nelson will continue working on the SOP for dates, will work with Rick. Need to add context for why the dates are important (big impact on model output). Rick’s document is ~30 pages. Goal is to share with USDA at the briefing in Sept.
    - First week of Sept – Marietta will call Sheryl with a heads up about the ask to help fill in the planting dates
- Processing scenarios – will do continually as dates are complete
  - Lee met with CCOE about using contractor computing power – will get an update when he is back in the office

## PCA/PCT

- Got the 2012-2016 chlorpyrifos PCT data from BEAD – they don’t think that an update will add a lot of value
- White paper outline is drafted
  - This week – will discuss with the team tomorrow and then finalize the outline
  - Next week – will start to drop in text
- Be prepared to address issues quickly (e.g., non-ag)
- Prioritize questions for USDA and scenarios that will impact chlorpyrifos

## USDA Briefing

- Marietta has emailed Sheryl with the potential dates and has not gotten a response yet
- Rick wants to see the slides in advance, but does not need us to brief him first

---

**From:** Arnold, Elyssa

**Sent:** Monday, August 05, 2019 4:02 PM

**To:** Matuszko, Jan <[Matuszko.Jan@epa.gov](mailto:Matuszko.Jan@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Kyle, Lee <[Kyle.Lee@epa.gov](mailto:Kyle.Lee@epa.gov)>; Corbin, Mark <[Corbin.Mark@epa.gov](mailto:Corbin.Mark@epa.gov)>; Spatz, Dana <[Spatz.Dana@epa.gov](mailto:Spatz.Dana@epa.gov)>; Echeverria, Marietta <[Echeverria.Marietta@epa.gov](mailto:Echeverria.Marietta@epa.gov)>

**Subject:** RE: Drinking Water Assessment Update - meeting notes

## Drinking Water Projects Meeting Notes – Action items

August 5, 2019

### Contractor Peer Review

- Lee will send latest draft of the contractor statement of work to Mark
- Mark will add the PCT/PCA sections and charge questions into that document with the possible goal of having 1 task order rather than 2
- Mark will have a first draft to share by next week's meeting, 8/12
- Need to be aware of possible end of fiscal year delays in the contracting office in Cincinnati
- Jan will talk to Brian Katz to make sure he is aware of our priorities

### Scenarios

- Input Parameters document will be completed this week
- Methods White Paper – current dates are below, but may need to tighten these up to allow for internal review time of up to 2 months depending on document length
  - Sept 19 framework complete (all parts except results)
  - Oct 15 entire paper complete – not including internal review
- Need to initiate project with Rick to add dates for perennials
- Peer review planned by end of February, then expect at least a month for re-runs
- Will need management briefings to decide which centile to use
- For next week, 8/12 – Lee will get a plan in place for prioritizing the chlorpyrifos scenarios (Nelson can report back next week when Lee is out)
- Lee will talk to LaTangila about a contractor for processing the scenarios
  - Stone or Waterborne may be options – Lee can call them and ask if they are reachable on any EPA contracts

### PCA/PCT

- Mark C. will check in with Mark S. on getting the 2012-2016 chlorpyrifos PCT data
- Will also ask about whether they plan on an updated SUUM per Marietta's conversation with Kimberly
- Holding weekly project meetings every Tuesday

## USDA Briefing

- Marietta will talk to Rick about the briefing tomorrow at their general before emailing Sheryl, we may need to brief Rick first
- Everyone should have their asks for USDA ready by the last week in August
  - For PCT – USDA input on non-ag data sources



Message

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**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 9/11/2019 1:32:12 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: draft Notes to BEAD registration review coordination meeting 9/10/19

Hey Mark,

See below. Red is my response. Also, sorry if I spilled the beans on the comment response. Let me know if we need to do anything with that...

Claire

---

**From:** Kiely, Timothy <Kiely.Timothy@epa.gov>  
**Sent:** Wednesday, September 11, 2019 9:20 AM  
**To:** Wyatt, TJ <Wyatt.Tj@epa.gov>; Berwald, Derek <Berwald.Derek@epa.gov>; Kaul, Monisha <Kaul.Monisha@epa.gov>; Chism, William <Chism.Bill@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>; Cook, Colwell <cook.colwell@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Jarboe, Stephen <Jarboe.Steve@epa.gov>; Gelso, Brett <gelso.brett@epa.gov>; Zinn, Nicole <Zinn.Nicole@epa.gov>; Tindall, Kelly <tindall.kelly@epa.gov>; Waterworth, Rebecca <Waterworth.Rebecca@epa.gov>; Hansel, Jeana <Hansel.Jeana@epa.gov>; Hendrick, Lindsey <hendrick.lindsey@epa.gov>; Anderson, Neil <Anderson.Neil@epa.gov>; English, LisaRenee <English.LisaRenee@epa.gov>  
**Cc:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** draft Notes to BEAD registration review coordination meeting 9/10/19

Good morning. Please reply to all with comments. Thank you.

Tim

**Notes from BEAD Registration Review Coordination Meeting – Tuesday, September 10, 2019**

Attendees: Tim, Brett, Bill, Colwell, Monisha, Derek, Jonathan, Nicole

1. External peer review proposal for PWC scenarios and PCA PCT (Jonathan, Claire)
  - a. The workgroup spent a fair amount of time discussing this project and related projects (ESA and pesticide usage data)
  - b. Claire described how pesticide usage is proposed to be used in ESA determinations
    - i. The proposed approach was published for public comment
    - ii. The comment period recently closed, and the team is reviewing the comments
  - c. The external peer review work statement was discussed
    - i. EFED asked BEAD (BAB) to review the work statement
    - ii. BAB was asked to review the project 1 work statement – improved method for developing field scenarios for DWAs
    - iii. It is not clear whether or not BEAD (ULUT?) was asked to review project 2 work statement – using PCA and PCT in DWA SIAB did review project 2 work statement...
    - iv. Comments on the work statement are due Thursday (9/11)
    - v. The work statement refers to draft supporting documents for project 1 and project 2 that the external peer reviewers are to review, but it does not appear that either document has been drafted

1. It is difficult to provide comments on the work statement without first having reviewed the two draft supporting documents
2. BAB/ULUT will ask EFED to review the draft supporting documents for each project – Claire mentioned that she and Mark on a workgroup to develop the project 2 draft supporting document
- d. BEAD tasks
  - i. Provide comment to EFED on draft work statement (Jonathan/Bill, due date: 9/11/19)
  - ii. Provide update to BEAD reg review coordination workgroup on usage data/ESA public comment response (Claire/Mark, due date: TBD)
  - iii. Provide update to BEAD reg review coordination workgroup on draft supporting documents referred to in the work statement for the external peer review for PWC scenarios and PCA PCT DWA projects (Mark/Monisha, due date: ongoing)
2. Spray drift windspeeds in reevaluation decisions (Jonathan, LisaRenee)
  - a. The workgroup discussed the PRD spray drift wind speed flowchart
  - b. The flowchart appears to have been completed in 2018 – no one from BEAD remembered having seen the chart until recently
  - c. The workgroup noted that there have been instances where BEAD has been unaware of proposed mitigation until very late in the decision-making process and not until after a PID has been published (i.e., mitigation added to PID after team review)
  - d. Nicole noted that the flow chart was developed based on input from other OPP divisions and stakeholders (NAAA and USDA) and is meant to be guidance for the CRMs as they work with the OPP teams on the mitigation proposal for a chemical
  - e. The workgroup stated that the requirement for wind speeds for groundboom seems to be a relatively new requirement, but Nicole stated that this has been included as part of spray drift mitigation for 1-1-1 ½ years – is it possible to check PRD's decision capture database to identify the chemicals with the groundboom wind speed mitigation?
  - f. BEAD tasks
    - i. Provide PRD comments on wind speed flowchart (BEAD workgroup, due date: 10/11/19)
    - ii. Discuss wind speed requirements with PRD (BEAD TLs/SSs and PRD TLs) (Brett/Colwell/Nicole, due date: after 10/11/19)
3. Next steps for aldicarb PRIA action (Jonathan, Rebecca, Jeana)
  - a. The registrant for aldicarb is requesting a new use on citrus
  - b. The PRIA date is July 2020
  - c. Aldicarb was previously registered on citrus but that use was voluntarily cancelled by the previous registrant due to HH risks of concern
  - d. RD met with the OPP team last week to discuss the new use and next steps
  - e. Many BEAD tasks were discussed during the meeting with RD
  - f. BEAD tasks
    - i. Schedule BEAD team meeting (invite Jonathan, Rebecca, Jeana, Monisha, Dexter, Brett, Tim, Mark, Lindsey) (Jonathan, due date: ASAP)
    - ii. Project PCT for citrus in FL and TX (Jonathan/Rebecca/Jeana/Lindsey, due date: TBD)
    - iii. Review new label for target pest and timing of application (Jonathan/Rebecca/Jeana, due date: TBD)
    - iv. FL and TX production statistics including production counties (Dexter, due date: TBD)

**From:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]  
**Sent:** 6/4/2019 2:22:31 PM  
**To:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Subject:** Re: Bromoxynil SUUM (ESA AIs) for your review

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, June 4, 2019 9:59:00 AM  
**To:** Paisley-Jones, Claire  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Thanks again Claire. I just want to make sure I understand a couple of your comments.

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

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**From:** Paisley-Jones, Claire  
**Sent:** Thursday, May 30, 2019 2:37 PM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

A few comments.

---

**From:** Doucoure, Cynthia  
**Sent:** Wednesday, May 29, 2019 3:17 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I've completed the update of the Bromoxynil SUUM. Please see both the Excel sheet with SUUM data and the memo. Let me know if you have any questions. Please note that I used Kynetec data for crops grown in CA except where Kynetec did not have usage data. Let me know if you have any questions.

Thanks,

Cynthia Doucoure

Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

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**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)

Thanks,  
Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I'm attaching the Bromoxynil SUUM for your review with the understanding that the time period remains the same (2012-2016) and that I'm still reviewing the PCT data. See responses in blue font below to your comments.

I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>  
**Subject:** ESA AIs

Cynthia,

Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

**As background:** we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.

The prometryn SUUM uses the phrase “not surveyed” and “not surveyed at state level” in table 2. Can these be interpreted to mean the same thing as “not surveyed at national level”? Yes in most of these cases but not always; some crops may not be surveyed nationally but may have CA data (i.e. cilantro).

For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate “not surveyed at national level” for these uses? These uses are extracted as “premises/areas” in the PLUS reports. I added both terms in the SUUM to make it clearer.

Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I’ve corrected the barley in WA and the alfalfa data. I’m now reviewing the PCT averages for all crops using our agreed upon method.

Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

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**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 6/3/2019 2:17:28 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review  
**Attachments:** Bromoxynil SUUM.Udate.2019(cpj2\_ms).docx

Hi Mark and Cynthia,

I replied to a few of Mark's comments.

# Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Suarez, Mark  
**Sent:** Friday, May 31, 2019 3:51 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,

I have a few comments, as well. I added them to Claire's document.

Mark

---

**From:** Paisley-Jones, Claire  
**Sent:** Thursday, May 30, 2019 2:37 PM  
**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

A few comments.

---

**From:** Doucoure, Cynthia  
**Sent:** Wednesday, May 29, 2019 3:17 PM  
**To:** Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

I've completed the update of the Bromoxynil SUUM. Please see both the Excel sheet with SUUM data and the memo. Let me know if you have any questions. Please note that I used Kynetec data for crops grown in CA except where Kynetec did not have usage data. Let me know if you have any questions.

Thanks,

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)

Thanks,  
Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

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I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>  
**Subject:** ESA Als

Cynthia,  
Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

As background: we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.

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For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate “not surveyed at national level” for these uses? These uses are extracted as “premises/areas” in the PLUS reports. I added both terms in the SUUM to make it clearer.

Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I’ve corrected the barley in WA and the alfalfa data. I’m now reviewing the PCT averages for all crops using our agreed upon method.

Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120



Message

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**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 5/30/2019 6:36:34 PM  
**To:** Doucoure, Cynthia [Doucoure.Cynthia@epa.gov]; Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review  
**Attachments:** Bromoxynil SUUM.Update.2019(cpj).docx

A few comments.

---

**From:** Doucoure, Cynthia  
**Sent:** Wednesday, May 29, 2019 3:17 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

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Thanks,

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 23, 2019 8:00 AM  
**To:** Doucoure, Cynthia <Doucoure.Cynthia@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Cynthia,

How is the update to the Bromoxynil SUUM coming along? You were using updated numbers, correct? (NMFS has also asked for updated numbers, which is good.)

Thanks,

Mark

---

**From:** Doucoure, Cynthia  
**Sent:** Tuesday, May 07, 2019 4:59 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Bromoxynil SUUM (ESA AIs) for your review

Hi Mark/Claire,

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I'm also attaching the signed copy of the Bromoxynil SUUM.

Thanks in advance for your review and comments.

Cynthia Doucoure  
Environmental Protection Agency  
OCSPP/OPP/BEAD, 7503P  
Potomac Yard S-9331  
(703) 308-8133

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 07, 2019 12:44 PM  
**To:** Doucoure, Cynthia <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>  
**Subject:** ESA AIs

Cynthia,  
Did you, or anyone else, address the following questions from NMFS?

**From NMFS:**

**As background:** we are hoping to include modified tables (based on the SUUM reports) that are specific to usage in WA, OR, ID and CA (in addition to including the entire SUUM report as an appendix). I added an appendix. I welcome your comments. I am also reviewing the PCT averages in that table using our agreed upon method.

**The prometryn SUUM uses the phrase “not surveyed” and “not surveyed at state level” in table 2. Can these be interpreted to mean the same thing as “not surveyed at national level”? Yes in most of these cases but not always; some crops may not be surveyed nationally but may have CA data (i.e. cilantro).**

**For bromoxynil, a few approved uses do not appear in the SUUM (industrial sites, rights-of-way, conservation reserve program). Would it be accurate to indicate “not surveyed at national level” for these uses? These uses are extracted as “premises/areas” in the PLUS reports. I added both terms in the SUUM to make it clearer.**

**Also, I noticed what might be a couple of typos in the PCT reported for Bromoxynil (table 2). Can you provided clarification for these? For barley in WA, the reported average (0.3) is lower than the reported minimum (43.6). For alfalfa in OR, the reported minimum (0.6) is higher than the reported maximum (0.0). I've corrected the barley in WA and the alfalfa data. I'm now reviewing the PCT averages for all crops using our agreed upon method.**

Thank you.

Mark

Mark Suarez  
Senior Scientist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 6/2/2020 3:56:42 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: Sorghum - Propazine

another

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Claire

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Thursday, May 21, 2020 12:31 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Sorghum - Propazine

# Ex. 5 Deliberative Process (DP)

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Wednesday, May 20, 2020 1:49 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** FW: Sorghum - Propazine

# Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>  
**Sent:** Tuesday, May 19, 2020 10:16 PM  
**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Cc:** Donovan, Elizabeth <[Donovan.Elizabeth@epa.gov](mailto:Donovan.Elizabeth@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** Sorghum - Propazine

Hey Claire,

I've attached the states where sorghum has undisclosed acres or an indication that it is not grown. The states in the lower 48 where all three CoA sorghum crops don't report acres are highlighted in orange. We don't need to deal with the NL48 yet, we'll wait until we hear back from PRD. Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

I'm going to update the aggregate PCTs based on the conversation today. Once we decided what to use for the state crop acres for the state in orange I can get you that information you and others in BEAD to review.

Feel free to forward this to others. The table is on the ESA SharePoint site so if you need me to add them to the site so they have access to the table let me know.

Jen

\*\*\*\*\*

Jennifer Connolly, Senior Scientist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: [\(703\) 347-0405](tel:(703)347-0405)  
fax: [\(703\) 305-0619](tel:(703)305-0619)  
e-mail: [connolly.jennifer@epa.gov](mailto:connolly.jennifer@epa.gov)

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Message

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**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 2/21/2019 2:33:15 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** RE: Carbaryl

## Ex. 5 Deliberative Process (DP)

---

**From:** Sims, Diann  
**Sent:** Wednesday, February 20, 2019 3:26 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** Re: Carbaryl

## Ex. 5 Deliberative Process (DP)

Diann Sims, Chief

Science Information Analysis Branch

OCSPP/Office of Pesticide Programs

Phone: (703)308-8129

[sims.diann@epa.gov](mailto:sims.diann@epa.gov)

---

**From:** Paisley-Jones, Claire  
**Sent:** Wednesday, February 20, 2019 3:21:11 PM  
**To:** Sims, Diann  
**Subject:** RE: Carbaryl

## Ex. 5 Deliberative Process (DP)

---

**From:** Sims, Diann  
**Sent:** Wednesday, February 20, 2019 3:20 PM

To: Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>

Subject: Carbaryl

Claire,

## **Ex. 5 Deliberative Process (DP)**

## **Ex. 5 Deliberative Process (DP)**

Diann Sims, Chief

Science Information Analysis Branch

OCSPP/Office of Pesticide Programs

Phone: (703)308-8129

[sims.diann@epa.gov](mailto:sims.diann@epa.gov)


Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 5/20/2020 5:48:56 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** FW: Sorghum - Propazine  
**Attachments:** sorghum census question.xlsx

<!--[if lte mso 15 || CheckWebRef]-->

Paisley-Jones, Claire has shared a OneDrive for Business file with you. To view it, click the link below.

 Sorgham\_NotGrown\_Undisclosed\_v1.xlsx

---

<!--[endif]-->

## Ex. 5 Deliberative Process (DP)

I'm attaching the four years of census data for sorghum. What do you think?

Claire

---

**From:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Sent:** Tuesday, May 19, 2020 10:16 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** Sorghum - Propazine

Hey Claire,

I've attached the states where sorghum has undisclosed acres or an indication that it is not grown. The states in the lower 48 where all three CoA sorghum crops don't report acres are highlighted in orange. We don't need to deal with the NL48 yet, we'll wait until we hear back from PRD.

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

I'm going to update the aggregate PCTs based on the conversation today. Once we decided what to use for the state crop acres for the state in orange I can get you that information you and others in BEAD to review.



Feel free to forward this to others. The table is on the ESA SharePoint site so if you need me to add them to the site so they have access to the table let me know.

Jen

\*\*\*\*\*

Jennifer Connolly, Senior Scientist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: connolly.jennifer@epa.gov

\*\*\*\*\*

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 5/31/2018 3:15:57 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Atwood, Donald [Atwood.Donald@epa.gov]; Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** RE: ca ag commissioners

Census of Ag uses acres harvested for tree crops and acres harvested for everything else.

## Ex. 5 Deliberative Process (DP)

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 31, 2018 11:10 AM  
**To:** Atwood, Donald <Atwood.Donald@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: ca ag commissioners

Don,

## Ex. 5 Deliberative Process (DP)

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

---

**From:** Atwood, Donald  
**Sent:** Thursday, May 31, 2018 10:51 AM

**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>

**Subject:** RE: ca ag commissioners

It would largely depend on the crop and location. As an example, some tomato production is indeterminate (plants continue to produce throughout the year until the first frost) while others are determinate and all ripen and are harvested at once. The indeterminate varieties are likely for fresh tomatoes (Florida) while determinate are for processed tomatoes (CA). As most tomatoes are now grown from transplant, it would be possible to double crop but largely they use different varieties that ripen at different time. However, I would expect surveys for multiple crop cycles would still be reflected in both total acres planted and harvested. I could be wrong.....(yeh, it happens...more often than I would like to admit).

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088  
[atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

---

**From:** Paisley-Jones, Claire

**Sent:** Thursday, May 31, 2018 10:33 AM

**To:** Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>

**Subject:** RE: ca ag commissioners

But could harvested include multiple crop cycles?

---

**From:** Atwood, Donald

**Sent:** Thursday, May 31, 2018 10:32 AM

**To:** Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>

**Subject:** RE: ca ag commissioners

## Ex. 5 Deliberative Process (DP)

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088  
[atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

---

**From:** Suarez, Mark

**Sent:** Thursday, May 31, 2018 10:09 AM

**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; Sims, Diann

<Sims.Diann@epa.gov>

**Subject:** RE: ca ag commissioners

Claire et al,

# Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

---

**From:** Paisley-Jones, Claire

**Sent:** Wednesday, May 30, 2018 3:36 PM

**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>

**Subject:** ca ag commissioners

Present for you Mark! 😊

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 5/31/2018 2:12:21 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Atwood, Donald [Atwood.Donald@epa.gov]; Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** RE: ca ag commissioners

## Ex. 5 Deliberative Process (DP)

Does one have more crops than the other?

---

**From:** Suarez, Mark  
**Sent:** Thursday, May 31, 2018 10:09 AM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: ca ag commissioners

Claire et al,

## Ex. 5 Deliberative Process (DP)

Does everyone agree?

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

---

**From:** Paisley-Jones, Claire  
**Sent:** Wednesday, May 30, 2018 3:36 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; Sims, Diann

<[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>

**Subject:** ca ag commissioners

Present for you Mark! 😊

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 5/29/2018 8:47:00 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Thanks ☺

---

**From:** Suarez, Mark  
**Sent:** Tuesday, May 29, 2018 4:46 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Claire,  
I think that this is a nice explanation.

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

---

**From:** Paisley-Jones, Claire  
**Sent:** Tuesday, May 29, 2018 4:13 PM  
**To:** Sells, Dexter <Sells.Dexter@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; OPP BEAD EAB <OPP\_BEAD\_EAB@epa.gov>; OPP BEAD BAB <OPP\_BEAD\_BAB@epa.gov>; OPP BEAD SIAB <OPP\_BEAD\_SIAB@epa.gov>  
**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

# Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Sells, Dexter

**Sent:** Tuesday, May 29, 2018 3:28 PM

**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; OPP BEAD EAB <[OPP\\_BEAD\\_EAB@epa.gov](mailto:OPP_BEAD_EAB@epa.gov)>; OPP BEAD BAB <[OPP\\_BEAD\\_BAB@epa.gov](mailto:OPP_BEAD_BAB@epa.gov)>; OPP BEAD SIAB <[OPP\\_BEAD\\_SIAB@epa.gov](mailto:OPP_BEAD_SIAB@epa.gov)>

**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Claire,

# Ex. 5 Deliberative Process (DP)

Dexter

---

**From:** Paisley-Jones, Claire

**Sent:** Tuesday, May 29, 2018 14:41

**To:** Sells, Dexter <[Sells.Dexter@epa.gov](mailto:Sells.Dexter@epa.gov)>; Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; OPP BEAD EAB <[OPP\\_BEAD\\_EAB@epa.gov](mailto:OPP_BEAD_EAB@epa.gov)>; OPP BEAD BAB <[OPP\\_BEAD\\_BAB@epa.gov](mailto:OPP_BEAD_BAB@epa.gov)>; OPP BEAD SIAB <[OPP\\_BEAD\\_SIAB@epa.gov](mailto:OPP_BEAD_SIAB@epa.gov)>

**Subject:** RE: 2012-2016 Usage Summaries from the S Drive



Hi Dexter et al.,

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Sells, Dexter

**Sent:** Tuesday, May 29, 2018 8:35 AM

**To:** Atwood, Donald <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>; OPP BEAD EAB <[OPP\\_BEAD\\_EAB@epa.gov](mailto:OPP_BEAD_EAB@epa.gov)>; OPP BEAD BAB <[OPP\\_BEAD\\_BAB@epa.gov](mailto:OPP_BEAD_BAB@epa.gov)>; OPP BEAD SIAB <[OPP\\_BEAD\\_SIAB@epa.gov](mailto:OPP_BEAD_SIAB@epa.gov)>

**Subject:** RE: 2012-2016 Usage Summaries from the S Drive

Don,

## Ex. 5 Deliberative Process (DP)

Dexter

---

**From:** Atwood, Donald

**Sent:** Monday, May 28, 2018 14:16

**To:** Sells, Dexter <Sells.Dexter@epa.gov>; OPP BEAD EAB <OPP\_BEAD\_EAB@epa.gov>; OPP BEAD BAB <OPP\_BEAD\_BAB@epa.gov>; OPP BEAD SIAB <OPP\_BEAD\_SIAB@epa.gov>

**Subject:** Re: 2012-2016 Usage Summaries from the S Drive

## Ex. 5 Deliberative Process (DP)

Donald W. Atwood, PhD

Entomologist

Office of Pesticide Programs

Biological and Economic Analysis Division

Biological Analysis Branch

Environmental Protection Agency

email: [atwood.donald@epa.gov](mailto:atwood.donald@epa.gov)

Phone: (703) 308-8088

---

**From:** Sells, Dexter

**Sent:** Friday, May 25, 2018 1:06 PM

**To:** OPP BEAD EAB; OPP BEAD BAB; OPP BEAD SIAB

**Subject:** 2012-2016 Usage Summaries from the S Drive

Hello everyone,

## Ex. 5 Deliberative Process (DP)

Dexter

National Data

[https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated across year NationalwithlbsAIPCT 2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w12f38e3d35584792a3d3ea9a14a39ec5&csf=1&e=xAvVYQ](https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated%20across%20year%20NationalwithlbsAIPCT%202016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w12f38e3d35584792a3d3ea9a14a39ec5&csf=1&e=xAvVYQ)



# PctCropTreated\_across\_year\_NationalwithlbsAIPCT\_2016 DEXTER IS THE MAN

Shared via SharePoint

Fungicide Almonds IPRODIONE 369889 398771 196509 184 963009 501155 627945 307291 201 963009 444642  
467501 231775 188 983948 367277 378502 ...

## State Data

[https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated\\_across\\_year\\_StatewithlbsAIPCT\\_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w13be639d680a486c950da07a4d749671&csf=1&e=wRHioE](https://usepa.sharepoint.com/:x:/r/sites/OCSPP/OPP/BEAD/Collaborate/Shared%20Documents/EAB/PctCropTreated_across_year_StatewithlbsAIPCT_2016%20DEXTER%20IS%20THE%20MAN.xlsx?d=w13be639d680a486c950da07a4d749671&csf=1&e=wRHioE)

PLEASE (I beg thee, I implore thee, and if the need arises, I'll scorn thee) do not overwrite the spreadsheet. –  
The 40<sup>th</sup> Commandment; Sections 155.56 and 155.58

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 1/29/2018 6:57:57 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** RE: Draft SUUM for Carbaryl

## Ex. 5 Deliberative Process (DP)

---

**From:** Sims, Diann  
**Sent:** Monday, January 29, 2018 1:45 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Draft SUUM for Carbaryl

## Ex. 5 Deliberative Process (DP)

---

**From:** Paisley-Jones, Claire  
**Sent:** Monday, January 29, 2018 1:29 PM  
**To:** Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: Draft SUUM for Carbaryl

Thoughts?

---

**From:** Garber, Kristina  
**Sent:** Monday, January 29, 2018 1:28 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Sims, Diann <Sims.Diann@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: Draft SUUM for Carbaryl

Hi Claire,

## Ex. 5 Deliberative Process (DP)

Does this answer your question?

Kris

---

**From:** Paisley-Jones, Claire  
**Sent:** Monday, January 29, 2018 1:20 PM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Cc:** Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: Draft SUUM for Carbaryl

Thanks for getting back to me so quickly.

I have a question for you. Katrina pointed out that we have gotten data from the Cranberry Institute for certain AIs in

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Garber, Kristina  
**Sent:** Friday, January 26, 2018 2:34 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Pease, Anita <Pease.Anita@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: Draft SUUM for Carbaryl

Claire,

Thank you for providing a draft for the EFED ESA team to review. Attached are our comments on the document.

We appreciate you providing the excel spreadsheet. It seems like we will be able to adjust this to fit our needs for the GIS analysis.

Please let me know if you have any questions.

Kris

---

**From:** Paisley-Jones, Claire  
**Sent:** Thursday, January 18, 2018 5:08 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Pease, Anita <Pease.Anita@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** Draft SUUM for Carbaryl

Hi all,

Please find attached the draft SUUM for carbaryl for your review/comments.

I've attached both the formatted word document, and the tables in excel (without merged cells) as we discussed in our last meeting.

Thanks,  
Claire

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 9/6/2017 1:21:56 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

Ok ! We could coordinate ☺

---

**From:** Sims, Diann  
**Sent:** Wednesday, September 06, 2017 9:21 AM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

At least one of them. I might ask Don to do the other. Depends on the timeline. We'll see.

---

**From:** Paisley-Jones, Claire  
**Sent:** Wednesday, September 6, 2017 9:17 AM  
**To:** Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

Can I do the reports?

## Ex. 6 Personal Privacy (PP)

---

**From:** Sims, Diann  
**Sent:** Wednesday, September 06, 2017 9:13 AM  
**To:** Pease, Anita <Pease.Anita@epa.gov>  
**Cc:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Diazinon (057801) National and State Summary Use and Usage Summary

Anita,

It would help to know the EFED timeline. We can develop a delivery schedule around that. Should we check with Phil or Brian or is there another keeper of the schedule?

---

**From:** Pease, Anita  
**Sent:** Wednesday, September 6, 2017 7:43 AM  
**To:** Sims, Diann <Sims.Diann@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Miller, Wynne <Miller.Wynne@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Villanueva, Philip <Villanueva.Philip@epa.gov>  
**Subject:** FW: Diazinon (057801) National and State Summary Use and Usage Summary

Hi Diann and Claire,

## Ex. 5 Deliberative Process (DP)

Anita Pease  
Acting Deputy Director  
Biological and Economic Analysis Division (BEAD)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency

703-305-0392  
[pease.anita@epa.gov](mailto:pease.anita@epa.gov)

---

**From:** Garber, Kristina  
**Sent:** Tuesday, September 05, 2017 2:37 PM  
**To:** Echeverria, Marietta <[Echeverria.Marietta@epa.gov](mailto:Echeverria.Marietta@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Villanueva, Philip <[Villanueva.Philip@epa.gov](mailto:Villanueva.Philip@epa.gov)>; Pease, Anita <[Pease.Anita@epa.gov](mailto:Pease.Anita@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>  
**Subject:** FW: Diazinon (057801) National and State Summary Use and Usage Summary

This is the refined usage analysis BEAD conducted for diazinon. I referenced this document at last week's meeting with

## Ex. 5 Deliberative Process (DP)

---

**From:** Garber, Kristina  
**Sent:** Wednesday, October 26, 2016 10:09 AM  
**To:** Pease, Anita <[Pease.Anita@epa.gov](mailto:Pease.Anita@epa.gov)>  
**Subject:** Fwd: Diazinon (057801) National and State Summary Use and Usage Summary

Here's the final memo from BEAD on the refined usage analysis for diazinon.

Begin forwarded message:

**From:** "Russell, CarolynY" <[Russell.Carolyny@epa.gov](mailto:Russell.Carolyny@epa.gov)>  
**To:** "Garber, Kristina" <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>, "Nguyen, Khue" <[Nguyen.Khue@epa.gov](mailto:Nguyen.Khue@epa.gov)>  
**Cc:** "Paisley-Jones, Claire" <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>, "Miller, Wynne" <[Miller.Wynne@epa.gov](mailto:Miller.Wynne@epa.gov)>, "Jarboe, Stephen" <[Jarboe.Steve@epa.gov](mailto:Jarboe.Steve@epa.gov)>, "Doucoure, Cynthia" <[Doucoure.Cynthia@epa.gov](mailto:Doucoure.Cynthia@epa.gov)>, "Prieto, Rafael" <[Prieto.Rafael@epa.gov](mailto:Prieto.Rafael@epa.gov)>, "Shah, Aruna" <[Shah.Aruna@epa.gov](mailto:Shah.Aruna@epa.gov)>, "Atwood, Donald" <[Atwood.Donald@epa.gov](mailto:Atwood.Donald@epa.gov)>  
**Subject:** Diazinon (057801) National and State Summary Use and Usage Summary

Your message is ready to be sent with the following file or link attachments:



Diazinon.pdf

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Message

---

**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 4/14/2020 1:58:40 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Corbin, Mark [Corbin.Mark@epa.gov]  
**Subject:** RE: Internal Pre-Meeting for WSDA Usage Call

Thanks Mark and Mark!

I think we are all on the same page.

Claire

---

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Tuesday, April 14, 2020 8:50 AM  
**To:** Corbin, Mark <Corbin.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Internal Pre-Meeting for WSDA Usage Call

Mark,

## Ex. 5 Deliberative Process (DP)

Lastly, thanks again. I really appreciate you following up with us on these items.

Regards,  
Mark

---

**From:** Corbin, Mark <Corbin.Mark@epa.gov>  
**Sent:** Tuesday, April 14, 2020 7:33 AM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** FW: Internal Pre-Meeting for WSDA Usage Call

Mark and Claire

## Ex. 5 Deliberative Process (DP)

Happy to talk if you want

Mark

**From:** Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>

**Sent:** Monday, April 13, 2020 10:54 AM

**To:** Suarez, Mark <Suarez.Mark@epa.gov>; Corbin, Mark <Corbin.Mark@epa.gov>; Antoline, Joshua <antoline.joshua@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sinnathamby, Sumathy <sinnathamby.sumathy@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>

**Subject:** RE: Internal Pre-Meeting for WSDA Usage Call

Hi all,

## Ex. 5 Deliberative Process (DP)

Rochelle

Peer review comments

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

-----Original Appointment-----

**From:** Bohaty, Rochelle

**Sent:** Tuesday, April 7, 2020 8:39 PM

**To:** Bohaty, Rochelle; Suarez, Mark; Corbin, Mark; Antoline, Joshua; Paisley-Jones, Claire; Connolly, Jennifer; Sinnathamby, Sumathy; Spatz, Dana

**Subject:** Internal Pre-Meeting for WSDA Usage Call

**When:** Monday, April 13, 2020 9:30 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).

**Where:** Microsoft Teams Meeting

This is the only time I can find for a pre-meeting.

---

[Join Microsoft Teams Meeting](#)

**Ex. 6 – Conference Code**

[Local numbers](#) | [Reset PIN](#) | [Learn more about Teams](#) | [Meeting options](#)

---

Message

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**From:** Paisley-Jones, Claire [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=62231C57B4ED4BF29429FA0AE537EC6A-PAISLEY-JONES, CLAIRE]  
**Sent:** 3/16/2020 7:09:40 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: ESA question

## Ex. 5 Deliberative Process (DP)

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Monday, March 16, 2020 3:00 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: ESA question

## Ex. 5 Deliberative Process (DP)

**From:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Sent:** Monday, March 16, 2020 2:50 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: ESA question

What we've been doing for ESA is to only use CADPR data for

1. CA crops
2. When the crop isn't surveyed by any of our other sources (and in these cases, indicate the % in ca, that other states are not surveyed and the total acres grown in those states)
3. We also mask PCTs for certain crops from PUR.

We know there are differences in all of the values between sources. Usually I don't see changes that pronounced in Lbs, but I don't doubt that they're there... I usually do a source comparison. This one wasn't originated by me, so it doesn't look like I did the comparison. Let me look at my data for those time frames/crops (FYI, there isn't 2018 ca data yet, so they can't have 2014-2018 pur data...)

Also, out of interest, who is "they"?

---

**From:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Sent:** Monday, March 16, 2020 1:14 PM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** FW: ESA question

What are your initial thoughts on this observation by Kelly?

Mark

---

**From:** Tindall, Kelly <[tindall.kelly@epa.gov](mailto:tindall.kelly@epa.gov)>  
**Sent:** Monday, March 16, 2020 12:22 PM  
**To:** Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>  
**Cc:** Berwald, Derek <[Berwald.Derek@epa.gov](mailto:Berwald.Derek@epa.gov)>  
**Subject:** ESA question

Mark,

## Ex. 5 Deliberative Process (DP)

Kelly Tindall, Senior Biologist  
Biological Analysis Branch  
Biological and Economic Analysis Division  
Office of Pesticide Programs  
US Environmental Protection Agency  
703-308-8188

**ALL CONTENTS AND ATTACHMENTS TO THIS EMAIL CORRESPONDENCE ARE TO BE CONSIDERED  
DRAFT/INTERNAL/DELIBERATIVE ONLY, NOT TO BE SHARED UNLESS SPECIFICALLY AND EXPLICITLY STATED**

Message

---

**From:** Peck, Charles [Peck.Charles@epa.gov]  
**Sent:** 2/21/2018 12:01:11 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** RE: ESA Screen

## Ex. 5 Deliberative Process (DP)

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 12314  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

---

**From:** Suarez, Mark  
**Sent:** Tuesday, February 20, 2018 2:01 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** ESA Screen

## Ex. 5 Deliberative Process (DP)

**Ex. 5 Deliberative Process (DP)**

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120



Message

---

**From:** Lin, James [lin.james@epa.gov]  
**Sent:** 11/3/2017 4:50:21 PM  
**To:** Wendel, Christina [Wendel.Christina@epa.gov]; Khan, Faruque [Khan.Faruque@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]  
**CC:** Villanueva, Philip [Villanueva.Philip@epa.gov]; Nguyen, Khue [Nguyen.Khue@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** RE: Methomyl - new SLUA

Thanks much.

---

**From:** Wendel, Christina  
**Sent:** Friday, November 03, 2017 12:49 PM  
**To:** Lin, James <lin.james@epa.gov>; Khan, Faruque <Khan.Faruque@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>  
**Cc:** Villanueva, Philip <Villanueva.Philip@epa.gov>; Nguyen, Khue <Nguyen.Khue@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: Methomyl - new SLUA

Hi Jim,

## Ex. 5 Deliberative Process (DP)

Let me know if you need anything else. For your information – I do have a lot of files/background materials on the branch G drive folder (see below) for reference.  
-Christina

G:\Branch and IO Info\ERB 2\Chemicals\Methomyl\ESA PRA 2016

---

**From:** Lin, James  
**Sent:** Friday, November 03, 2017 12:33 PM  
**To:** Wendel, Christina <Wendel.Christina@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Cc:** Villanueva, Philip <Villanueva.Philip@epa.gov>; Nguyen, Khue <Nguyen.Khue@epa.gov>  
**Subject:** RE: Methomyl - new SLUA

Thanks much Christina, for providing the info.

I guess that I will be the one doing the PRA on the fate part. Previous I thought that I was only helping the DWA. For DWA, we have already had several meetings with HED, PRD, and BEAD.

## Ex. 5 Deliberative Process (DP)

BTW, can you provide me the ESA you have done?

Thanks much.

Jim

---

Hi, Matt:

## Ex. 5 Deliberative Process (DP)

Thanks much.

Jim

**From:** Manupella, Matthew

**Sent:** Wednesday, October 11, 2017 4:48 PM

**To:** Lin, James <[lin.james@epa.gov](mailto:lin.james@epa.gov)>

**Cc:** Costello, Kevin <[Costello.Kevin@epa.gov](mailto:Costello.Kevin@epa.gov)>; Britton, Cathryn <[Britton.Cathryn@epa.gov](mailto:Britton.Cathryn@epa.gov)>; Villanueva, Philip <[Villanueva.Philip@epa.gov](mailto:Villanueva.Philip@epa.gov)>; Kiely, Timothy <[Kiely.Timothy@epa.gov](mailto:Kiely.Timothy@epa.gov)>; Kaul, Monisha <[Kaul.Monisha@epa.gov](mailto:Kaul.Monisha@epa.gov)>; Reighart, Andrew <[Reighart.Andrew@epa.gov](mailto:Reighart.Andrew@epa.gov)>; Cook, Colwell <[cook.colwell@epa.gov](mailto:cook.colwell@epa.gov)>; Sells, Dexter <[Sells.Dexter@epa.gov](mailto:Sells.Dexter@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Mallampalli, Nikhil <[Mallampalli.Nikhil@epa.gov](mailto:Mallampalli.Nikhil@epa.gov)>; Milians, Karen <[Milians.Karen@epa.gov](mailto:Milians.Karen@epa.gov)>

**Subject:** Methomyl Typical Scenarios

Hi Jim-

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Please let me know if you have any questions.

Thanks,  
Matt

Matthew Manupella  
Chemical Review Manager  
U.S. Environmental Protection Agency  
OCSPP/OPP/PRD/RMIBII  
(703) 347-0411

Message

---

**From:** Wendel, Christina [Wendel.Christina@epa.gov]  
**Sent:** 11/3/2017 4:49:09 PM  
**To:** Lin, James [lin.james@epa.gov]; Khan, Faruque [Khan.Faruque@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]  
**CC:** Villanueva, Philip [Villanueva.Philip@epa.gov]; Nguyen, Khue [Nguyen.Khue@epa.gov]; Panger, Melissa [Panger.Melissa@epa.gov]  
**Subject:** RE: Methomyl - new SLUA  
**Attachments:** Chapter 3. Exposure Characterization\_MET.DOCX

Hi Jim,

## Ex. 5 Deliberative Process (DP)

-Christina

G:\Branch and IO Info\ERB 2\Chemicals\Methomyl\ESA PRA 2016

---

**From:** Lin, James  
**Sent:** Friday, November 03, 2017 12:33 PM  
**To:** Wendel, Christina <Wendel.Christina@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>  
**Cc:** Villanueva, Philip <Villanueva.Philip@epa.gov>; Nguyen, Khue <Nguyen.Khue@epa.gov>  
**Subject:** RE: Methomyl - new SLUA

Thanks much Christina, for providing the info.

I guess that I will be the one doing the PRA on the fate part. Previous I thought that I was only helping the DWA. For DWA, we have already had several meetings with HED, PRD, and BEAD.

## Ex. 5 Deliberative Process (DP)

Thanks much.

Jim

---

Hi, Matt:

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Thanks much.

Jim

**From:** Manupella, Matthew

**Sent:** Wednesday, October 11, 2017 4:48 PM

**To:** Lin, James <[lin.james@epa.gov](mailto:lin.james@epa.gov)>

**Cc:** Costello, Kevin <[Costello.Kevin@epa.gov](mailto:Costello.Kevin@epa.gov)>; Britton, Cathryn <[Britton.Cathryn@epa.gov](mailto:Britton.Cathryn@epa.gov)>; Villanueva, Philip <[Villanueva.Philip@epa.gov](mailto:Villanueva.Philip@epa.gov)>; Kiely, Timothy <[Kiely.Timothy@epa.gov](mailto:Kiely.Timothy@epa.gov)>; Kaul, Monisha <[Kaul.Monisha@epa.gov](mailto:Kaul.Monisha@epa.gov)>; Reighart, Andrew <[Reighart.Andrew@epa.gov](mailto:Reighart.Andrew@epa.gov)>; Cook, Colwell <[cook.colwell@epa.gov](mailto:cook.colwell@epa.gov)>; Sells, Dexter <[Sells.Dexter@epa.gov](mailto:Sells.Dexter@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Mallampalli, Nikhil <[Mallampalli.Nikhil@epa.gov](mailto:Mallampalli.Nikhil@epa.gov)>; Milians, Karen <[Milians.Karen@epa.gov](mailto:Milians.Karen@epa.gov)>

**Subject:** Methomyl Typical Scenarios

Hi Jim-

# Ex. 5 Deliberative Process (DP)

Please let me know if you have any questions.

Thanks,  
Matt

Matthew Manupella

Chemical Review Manager  
U.S. Environmental Protection Agency  
OCSP/OPP/PRD/RMIBII  
(703) 347-0411

Message

---

**From:** Panger, Melissa [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3AE9780510D84F499C8465FB70DE5CDA-MELISSA PANGER]  
**Sent:** 10/16/2019 3:35:13 PM  
**To:** Breithaupt, James [Breithaupt.James@epa.gov]  
**Subject:** RE: [empmlist] Reminder: EMPM Meeting on October 16th: Agenda and Abstracts included

Thanks, Jim!

---

Melissa Panger, Ph.D.  
Branch Chief, RASSB  
Antimicrobials Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
panger.melissa@epa.gov

---

**From:** Breithaupt, James <Breithaupt.James@epa.gov>  
**Sent:** Wednesday, October 16, 2019 8:42 AM  
**To:** OPP AD RASSB <OPP\_AD\_RASSB@epa.gov>  
**Subject:** FW: [empmlist] Reminder: EMPM Meeting on October 16th: Agenda and Abstracts included

Just a reminder, the EMPM meeting is today. It is usually held on the first floor and addresses environmental fate and risk from the EFED point of view. However, some of their presentations may have some value to us in AD.

---

**From:** EMPM <OPP\_EMPM@epa.gov>  
**Sent:** Wednesday, October 09, 2019 3:11 PM  
**To:** Environmental Modeling Public Meeting (EMPM) <empmlist@lists.epa.gov>  
**Subject:** [empmlist] Reminder: EMPM Meeting on October 16th: Agenda and Abstracts included

Dear EMPM Members,

Please note, if you are in need of Wifi access while you attend the meeting, please reply to this email with a cell phone number that can be used for two-factor authentication by **noon on Thursday October 10th**. Please do not reply if Wifi is not needed.

The meeting will be held on Wednesday, October 16th from 9:00 am to 4:00 pm (Eastern) at the Environmental Protection Agency, Office of Pesticide Programs (OPP), One Potomac Yard (South Building), First Floor South Conference Room, 2777 S. Crystal Drive, Arlington, VA 22202. If you have any questions, or would still like to register, please contact Rebecca Lazarus and Zoe Ruge at [OPP\\_EMPM@epa.gov](mailto:OPP_EMPM@epa.gov). Those who have already sent notification, your names have been collected and thank you for the notification.

To request accommodation of a disability, please let us know as soon as possible.

All guests attending in-person will be required to present a valid photo I.D. to security and will be required to sign in at the guard desk. All guests will pass through a metal detector, and their bags will be scanned through

an X-ray, before entering the first-floor conference room. Please allow adequate time for check-in. Coffee and lunch will not be provided at the meeting. However, there are a number of restaurants nearby and ample time will be provided for lunch.

For those interested in attending the EMPM remotely, or to access meeting materials such as the agenda and abstracts, please refer to the Skype Meeting link provided below:

## Ex. 6 Personal Privacy (PP)

Thank you for your consideration,

Rebecca Lazarus and Zoe Ruge

2019 EMPM Co-Chairs

### Environmental Modeling Public Meeting (EMPM) Agenda – October 16, 2019

#### Topic: Incorporation of Pesticide Usage Data into Environmental Exposure and Ecological Risk Assessments

Time (EDT)	Presentation Title	Presenter(s)
9:00 - 9:15	Welcome and Introductions	Zoe Ruge and Rebecca Lazarus (EFED, U.S. EPA)
	Opening Remarks	Brian Anderson, (EFED, U.S. EPA)
	<b>Updates</b>	
9:15 - 9:25	Updates on Approaches for Quantitative Use of Surface Water Monitoring Data in Pesticide Drinking Water Assessments	Rochelle Bohaty (EFED, U.S. EPA)
9:25 - 9:35	Update on Pesticide in Water Calculator (PWC) Scenarios	Nelson Thurman (EFED, U.S. EPA)
9:35 - 9:45	Draft Greater Than Additive (GTA) Guidance	Edward Odenkirchen (EFED, U.S. EPA)
9:45 – 10:00	Draft Waiver Guidance for the Avian Sub-Acute Dietary Test	Edward Odenkirchen (EFED, U.S. EPA)
10:00 – 10:25	An Overview of Pesticide Usage Data Sources used by US EPA/OPP	Mark Suarez (BEAD, U.S. EPA)
10:25 - 10:40	<b>Break</b>	
	<b>Morning Presentations</b>	
10:40 - 11:05	Application of Pesticide Usage Data in Endangered Species Risk Assessments	Kristina Garber (EFED, U.S. EPA)
11:05 - 11:30	A Methodology for Quantifying National Pesticide Usage at the County Scale for Use in Endangered Species Risk Assessments	Michael Winchell (Stone Environmental)



Time (EDT)	Presentation Title	Presenter(s)
11:30 - 11:55	Application of Pesticide Usage Information in Probabilistic Framework to Inform Listed Species Exposure	Chris Holmes (Applied Analysis Solutions, LLC)
11:55 - 1:00	<b>Lunch</b>	
	<b>Afternoon Presentations</b>	
1:00 - 1:25	Overview of the California Pesticide Use Reports Database	Kimberly Steinmann (California Department of Pesticide Regulation)
1:25 - 1:50	Pesticide Use Reporting (PUR) Data and Their Use in Modeling for Pesticide Exposure and Risk Assessment in Aquatic Environments	Xuyang Zhang and Yina Xie (California Department of Pesticide Regulation)
1:50 - 2:15	Re-Scaling Pesticide Use Reporting Data to Support a Data-Driven Geospatial Modeling Framework Aiming to Assess Pesticide Contamination in Surface Water	Dan Wang and Christopher DeMars (California Department of Pesticide Regulation)
2:15 - 2:30	<b>Break</b>	
2:30 - 2:55	Washington State Department of Agriculture Pesticide Use Program	Rachel Seman-Varner (Washington State Department of Agriculture Pesticide Use Program)
2:55 - 3:20	Sources of Usage Data Gathered in the Fight to Control Mosquitoes in Lee County, Florida	Ed Foley (Lee County Mosquito Control District)
3:20 - 3:45	Pesticide Use Patterns in Organized Mosquito Control Programs Throughout the United States	Daniel Markowski (Vector Disease Control International)
3:45 - 3:55	Closing Remarks	Zoe Ruge and Rebecca Lazarus (EFED, U.S. EPA)

## Fall 2019 EMPM Abstracts

**Title:** An Overview of Pesticide Usage Data Sources used by US EPA/OPP

**Presenters:** Mark Suarez (BEAD, U.S. EPA)

**Abstract:** The U.S. EPA Office of Pesticide Programs relies upon pesticide use and usage information to inform regulatory decisions. These data come from a variety of public and commercial sources, each with inherent strengths and weaknesses. This presentation will review the EPA's data quality requirements, primary usage data sources, and the usage information available and the limitations of each source. Additionally, the totality of the available pesticide usage data for both agricultural and non-agricultural use will be explored.

**Title:** Application of Pesticide Usage Data in Endangered Species Risk Assessments

**Presenters:** Kristina Garber (EFED, U.S. EPA)

**Abstract:** Pesticide usage data are an important consideration when determining if the use of a pesticide is Likely or Not Likely to Adversely Affect an endangered or threatened species. Data on the percent of a treated crop can be applied to landcover data representing potential use sites of that crop. The result is an estimate of the number of treated acres for that crop. The total estimated area for all crops registered for the assessed chemical can be used to estimate the extent of a species range and the number of individuals of the species that may be exposed to the assessed pesticide.

**Title:** A Methodology for Quantifying National Pesticide Usage at the County Scale for Use in Endangered Species Risk Assessments

**Presenters:** Michael Winchell, Sebastian Castro-Tanzi, Jonnie Dunne, Paul Whatling (Stone Environmental)

**Abstract:** Endangered species risk assessments require that pesticide usage be understood and quantified probabilistically. This quantified usage information can play a role at multiple stages in the risk assessment process, including co-occurrence analysis, exposure assessment, and a weight-of-evidence analysis. The resolution of usage data, including the spatial unit and use site level of aggregation, are important aspects that determine the level of refinement possible with the data. Usage data considered by federal agencies in recent Biological Evaluations and Biological Opinions has been largely limited to state-level usage estimates, with some exceptions in locations such as California. However, pesticide usage by crop group at the county-level can be estimated from best available, publicly available nationwide data sources. In this study, several methods to generate these estimates were developed and tested using malathion as a case study. These methods were evaluated against observed crop group county-level annual malathion usage from the Pesticide Use Reporting (PUR) database in California. The best performing method considered county-level total usage, state-level crop group usage, and potential usage based on CDL crop acreage, NASS survey data crop acreage and malathion label use rates. Potential usage describes how much pesticide could be used over a given region and crop group if all potential use sites were treated at maximum label rates. The actual percent of potential usage, which is equivalent to Percent Crop Treated at maximum label rates, was also quantified at the county and crop group level. The methodology developed was applied nationally using seven years of malathion usage data (2010-2016) resulting in probability distributions of both annual usage and actual percent of potential usage. The pesticide usage data sources and the estimation and analysis methodologies developed represent an unbiased and reproducible approach to maximizing the utility of publicly available pesticide usage data that can be applied to better inform national endangered species risk assessments.

**Title:** Application of pesticide usage information in a probabilistic framework to inform listed species exposure

**Presenters:** Christopher M. Holmes<sup>1</sup>, Joshua Amos<sup>2</sup>, Nathan Snyder<sup>2</sup>, Matt Kern<sup>2</sup>, James Cowles<sup>3</sup> and Kevin Henry<sup>3</sup>

<sup>1</sup>*Applied Analysis Solutions LLC, Berryville, VA, USA*

<sup>2</sup>*Waterborne Environmental Inc., Leesburg, VA, USA*

<sup>3</sup>*NovaSource / Tessenderlo Kerley, Inc., Phoenix, AZ USA*

**Abstract:** Identification and incorporation of pesticide usage information into the environmental exposure and ecological risk process is an area of interest as expressed in EPA's "*Proposed Revised Method for National Level Endangered Species Risk Assessment Process for Biological Evaluations of Pesticides*." The application of probabilistic usage information represents a key element of risk characterization and species protection strategies.

This presentation will describe how relevant field-level pesticide application information (*e.g.*, application rate, percent of field treated) can be extracted from available sources and utilized in a probabilistic framework developed by the Generic Endangered Species Task Force (GESTF). This framework is nationally applicable to current species ranges, critical habitat, or range delineations as they may be amended over time. The methodology evaluates pesticide applications and potential exposure within designated species ranges, utilizing available spatial information on use sites and species locations. Results are summarized into a quantitative index describing the species range utilizing multiple trials within a probabilistic simulation. An example will be presented illustrating the approach with specific usage data and labeled use applied to existing delineation of a species range.

**Title:** Re-Scaling Pesticide Use Reporting Data to Support a Data-Driven Geospatial Modeling Framework Aiming to Access Pesticide Contamination in Surface Water

**Presenters:** Dan Wang and Christopher DeMars (California Department of Pesticide Regulation)

**Abstract:** The Department of Pesticide Regulation (DPR) uses surface water contamination data in two important ways: as a component of dietary risk assessment and to prevent and respond to pesticide concentrations above levels considered to pose a risk to human health or aquatic life. Knowledge regarding the status and trend of pesticides in surface waters is important in assessing risks. Conventional statistical methods that investigate spatial (*e.g.*, status) or temporal (*e.g.*, trend) patterns focusing on concentration data alone do not work well because monitoring data tend to have intermittent, irregular, and insufficient sampling coverage. DPR is developing a new data-driven, geospatial modeling framework that supports exposure assessment. To achieve this, DPR needs to identify attributes that could affect the fate and transport of pesticides in the aquatic environment and amass them into an extensive database. We organize the attributes that include the pesticide use history, weather history, and watershed characteristics, according to the catchment where each monitoring site is located and the entire contributing watershed to that catchment. In this presentation, we will describe the approach used to re-scale the pesticide use data reported to California's Pesticide Use Reporting Database to the catchment and watershed levels. We will also discuss how the data-driven modeling framework can be used to interpret existing monitoring data to support risk assessments and risk-management decisions.

**Title:** Overview of the California Pesticide Use Reports database

**Presenter:** Kimberly Steinmann (California Department of Pesticide Regulation)

**Abstract:** The Pesticide Use Report database, or PUR as it is often called, contains a wealth of pesticide data that can be useful for many different types of analyses. The goal of this presentation is to offer an overview of what data is available, the many different ways it is currently used in California, and how it can be accessed in the hopes that it might inspire new ideas for pesticide analyses.

**Title:** Pesticide Use Reporting (PUR) data and their use in modeling for pesticide exposure and risk assessment in aquatic environments

**Presenters:** Xuyang Zhang, Yina Xie, and Yuzhou Luo (California Department of Pesticide Regulation)

**Abstract:** California's pesticide use reporting (PUR) program is recognized as the most comprehensive of its kind in the world. Under the program, all agricultural pesticide use and other professional applications in residential areas must be reported to California Department of Pesticide Regulation (DPR). PUR data provide detailed information of pesticide applications, including location (at the 1 sq. mile section level for agricultural uses and

the county level for urban uses), time (per application for agricultural uses and monthly summary for urban uses), application rate, and site (e.g., crops, urban structural, and landscape). PUR data have been used by DPR's Surface Water Protection Program (SWPP) on risk and exposure assessments for pesticides in surface water. Early efforts with the use data were associated with spatial data analysis to identify hotspots for pesticide residue occurrence as well as use patterns associated with high runoff potential. Later, systematic approaches are incorporated into the Surface Water Prioritization Model, where PUR data are utilized with pesticide physicochemical properties and landscape characteristics to prioritize the chemicals and areas of interest for surface water monitoring conducted by SWPP. PUR data are also used to drive physically-based models including PRZM and SWAT for advanced modeling of pesticide fate and transport. PUR data are used to develop pesticide application scenarios for PRZM and SWAT models. The use-based, watershed-scaled modeling is typically used to evaluate spatial and temporal distribution of pesticides in surface waters for post-use risk assessment, baseline of pesticide contamination, and effectiveness of BMPs. In this presentation, SWPP staff will showcase the use of PUR data in supporting DPR's regulatory approach and mitigation practices to reduce pesticide exposures to aquatic ecosystems.

**Title:** Washington State Department of Agriculture Pesticide Use Program

**Presenters:** Rachel Seman-Varner and Gary Bahr (WSDA Natural Resource Assessment Section)

**Abstract:** Comprehensive pesticide use data is essential to assess the impacts of pesticides on water resources. States' approaches to the collection of pesticide use data vary. Typical pesticide use is assessed as part of the Washington State Department of Agriculture's (WSDA) Natural Resources Assessment Section (NRAS). Pesticide use, surface water monitoring, and agricultural land use mapping are all critical elements in the state Pesticide Management Strategy to evaluate and potentially mitigate impacts to Endangered Species Act (ESA) listed species. Because agricultural lands may coincide with critical habitat, it is essential that current region-specific use patterns are understood in order to determine and manage potential risk. NRAS meets with commodity groups including growers, consultants, commissions, cooperative extension agents, registrants, and other industry representatives to collect typical pesticide use information for specific crops grown in specific regions. To be considered representative of typical pesticide use practices, groups must represent commercial producers from a variety of farm sizes and a minimum of 30 percent of the statewide acreage. Initial NRAS collection events were organized from 2005 to 2014 and included 38 different crops. Typical pesticide use patterns are compared to agricultural land use and surface water quality data and related through crop use profiles, active ingredient use summaries, and spatially, through use intensity maps. NRAS is currently updating information for specific commodities and pesticides of concern. Meetings with representatives of cranberry and potato (Eastern and Western WA) industries were conducted in spring 2019. Changes in products and patterns are being compared to the most recent data (from 2010) for each commodity. In the future, NRAS will focus on improving the quality of the data and summary products, and comparing use patterns over time. Under the state-initiated plan, WSDA will facilitate the incorporation of typical pesticide use data into the federal ESA consultation process to ensure decisions made in Washington are based on current and accurate state and region-specific data to develop mitigation measures that protect endangered species, are practical to implement, and preserve the economic viability of agriculture in Washington State.

**Title:** Sources of usage data gathered in the fight to control mosquitoes in Lee county, Florida

**Presenter:** Ed Foley (Lee Country Mosquito Control District)

**Abstract:** The application of pesticides in the mosquito control industry is highly specialized and differs significantly from agricultural and commercial pest control. Public health mosquito control has unique product

formulations, application techniques, equipment, usage sites, and treatment frequencies that should be accounted for when modeling environmental exposure and ecological risk. As an end user of pesticides, Lee County Mosquito Control District (LCMCD) is a stakeholder in the accurate evaluation of products by the Environmental Protection Agency. LCMCD hopes to offer insight into real world applications of pesticides for public health mosquito control from an end users perspective focusing on the area wide treatments for adult mosquito control and current record keeping practices.

**Title:** Pesticide Use Patterns in Organized Mosquito Control Programs Throughout the United States.

**Presenter:** Daniel Markowski (Vector Disease Control International)

**Abstract:** Spraying for adult mosquitoes may often be perceived as the principle treatment method for mosquito control programs, however it is important to note that most programs utilize an integrated management approach which includes source reduction (eliminating larval habitats), surveillance, biological control, larvicides, and education. Adulticides play a vital role when mosquito numbers exceed local threshold limits, such as when flooding causes extreme numbers of nuisance mosquitoes or when there are outbreaks of disease. Excessive use of pesticides increase the costs associated with operating a program, contribute to pesticide resistance, and increase exposure to non-target organisms. Therefore, applications by organized mosquito control programs are limited and based on the proper analysis of mosquito population data. Mosquito control applications are also limited by current label language and the bionomics of local mosquito species combined with disease risks. Theoretical pesticide use scenarios intent on delineating application risks should rely on current application and pesticide use data, but cannot be the only means to determine potential use patterns. This presentation will discuss the American Mosquito Control Association's (AMCA) pesticide usage data and its implications for predictive pesticide use modeling.

Message

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**From:** Panger, Melissa [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3AE9780510D84F499C8465FB70DE5CDA-MELISSA PANGER]  
**Sent:** 10/11/2018 11:34:33 AM  
**To:** Connolly, Jennifer (Connolly.Jennifer@epa.gov) [Connolly.Jennifer@epa.gov]; Lennartz, Steven (Lennartz.Steven@epa.gov) [Lennartz.Steven@epa.gov]; Rossmeisl, Colleen (Rossmeisl.Colleen@epa.gov) [Rossmeisl.Colleen@epa.gov]; Paisley-Jones, Claire (Paisley-Jones.Claire@epa.gov) [Paisley-Jones.Claire@epa.gov]  
**CC:** Anderson, Brian (Anderson.Brian@epa.gov) [Anderson.Brian@epa.gov]  
**Subject:** Draft 'Two-Pager' on ESA usage approach  
**Attachments:** PROPOSED PROCESS FOR APPLYING USAGE DATA INTO THE ESA (Steps 1 and 2).docx

As mentioned in yesterday's check-in meeting with management, I've drafted a 'two-pager' (which is really 5 pages) on our proposed approach for incorporating usage data into the ESA process. When we said we already had a two-pager written up... I forgot that that write-up was based on the percent crop treated approach (which is now Step 2)... So I made that write-up 'STEP 2' and I added a 'STEP 1' section.

Please take a look at this and provide comments by early next week (if possible – if not, please let me know).

Thanks!  
Melissa

---

Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
panger.melissa@epa.gov

Message

---

**From:** Panger, Melissa [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3AE9780510D84F499C8465FB70DE5CDA-MELISSA PANGER]  
**Sent:** 9/5/2018 8:04:33 PM  
**To:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

I think it's a fair question... I had the same one???

---

Melissa Panger, Ph.D.  
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USEPA

703-305-6136  
panger.melissa@epa.gov

---

**From:** Suarez, Mark  
**Sent:** Wednesday, September 05, 2018 4:03 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

You're welcome.  
It's my most significant contribution to this point.

## Ex. 5 Deliberative Process (DP)

it is

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

---

**From:** Panger, Melissa  
**Sent:** Wednesday, September 05, 2018 3:51 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

Thanks, Mark!

---

Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

---

**From:** Suarez, Mark  
**Sent:** Wednesday, September 05, 2018 1:53 PM  
**To:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Cc:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

I'm getting the projector.

Regards,  
Mark

Mark Suarez  
Entomologist  
Science Information and Analysis Branch  
Biological and Economic Analysis Division  
US EPA (Mail Code 7503P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

phone: 703-305-0120

---

**From:** Sims, Diann  
**Sent:** Wednesday, September 05, 2018 1:08 PM  
**To:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Cc:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

Projector will take a second. We're in a meeting in the room until 2. If we finish early, I'll grab it.

---

**From:** Panger, Melissa  
**Sent:** Wednesday, September 5, 2018 1:07 PM  
**To:** Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Cc:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)



Brian... can you set up the phone line?

I'll meet with the FWS in the lobby to escort them up.

Can somebody set up the projector?

---

Melissa Panger, Ph.D.  
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USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

---

**From:** Sims, Diann  
**Sent:** Wednesday, September 05, 2018 1:03 PM  
**To:** Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>  
**Cc:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

We have one. I'm in a meeting until 2. Carolyn at the receptionist desk can help you.

---

**From:** Anderson, Brian  
**Sent:** Wednesday, September 5, 2018 12:58 PM  
**To:** Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>  
**Cc:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

Do we have one?

---

**From:** Becker, Jonathan  
**Sent:** Wednesday, September 05, 2018 12:38 PM  
**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>  
**Cc:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Suarez, Mark <[Suarez.Mark@epa.gov](mailto:Suarez.Mark@epa.gov)>; Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Sims, Diann <[Sims.Diann@epa.gov](mailto:Sims.Diann@epa.gov)>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

I think it would be helpful if we had a projector set up so that we could pull up the Census of Agriculture and show them actual country level data.

---

**From:** Paisley-Jones, Claire  
**Sent:** Wednesday, September 05, 2018 9:40 AM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>  
**Cc:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: ESA Usage (EPA/Services Coordination)

Sounds good 😊

---

**From:** Panger, Melissa  
**Sent:** Wednesday, September 05, 2018 9:37 AM  
**To:** Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Cc:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** Re: ESA Usage (EPA/Services Coordination)

Yes... in our process. But I think we need to break the process into 'bite-sized' pieces. The idea is to get buy-in on that general idea... to lead them into a direction that aligns with our proposed process.. sound good?

Sent from my iPhone

On Sep 5, 2018, at 9:15 AM, Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov> wrote:

## Ex. 5 Deliberative Process (DP)

Claire

---

**From:** Panger, Melissa  
**Sent:** Wednesday, September 05, 2018 8:32 AM  
**To:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>  
**Cc:** Anderson, Brian <Anderson.Brian@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** ESA Usage (EPA/Services Coordination)

Hi All,

In an attempt to stay a bit of ahead of the curve... I wanted to start thinking about what we might want to discuss in our next meeting(s) with the services on the usage stuff (in case it comes up at the end of today's meeting).

Once we get through the step of incorporating the NASS census data at the county-level... which will lead us to the number of acres that could potentially be treated in each county (ag only), I thought it might be good to then start talking about bringing in the usage data (i.e., applying the state PCTs to each county) —

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Does that sound ok to folks? Any other ideas?

Thanks!

Melissa

---

Melissa Panger, Ph.D.  
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Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

Message

---

**From:** Panger, Melissa [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3AE9780510D84F499C8465FB70DE5CDA-MELISSA PANGER]  
**Sent:** 8/23/2018 7:58:52 PM  
**To:** Connolly, Jennifer (Connolly.Jennifer@epa.gov) [Connolly.Jennifer@epa.gov]  
**Subject:** FW: Malathion SUUM; Updates to CA PCTs  
**Attachments:** Revised Malathion SUUM for ESA.docx; EFED Revised Malathion SUUM Tables.final. 082218.xlsx

FYI...

---

Melissa Panger, Ph.D.  
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panger.melissa@epa.gov

---

**From:** Sims, Diann  
**Sent:** Thursday, August 23, 2018 2:43 PM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>  
**Cc:** Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Miller, Wynne <Miller.Wynne@epa.gov>; Suarez, Mark <Suarez.Mark@epa.gov>; Atwood, Donald <Atwood.Donald@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** Malathion SUUM; Updates to CA PCTs

## Ex. 5 Deliberative Process (DP)

Message

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**From:** Panger, Melissa [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3AE9780510D84F499C8465FB70DE5CDA-MELISSA PANGER]  
**Sent:** 8/14/2018 7:57:55 PM  
**To:** Anderson, Brian [Anderson.Brian@epa.gov]  
**Subject:** RE: Usage approach

## Ex. 5 Deliberative Process (DP)

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Melissa Panger, Ph.D.  
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Office of Pesticide Programs  
USEPA

703-305-6136  
panger.melissa@epa.gov

---

**From:** Anderson, Brian  
**Sent:** Tuesday, August 14, 2018 3:53 PM  
**To:** Panger, Melissa <Panger.Melissa@epa.gov>  
**Subject:** FW: Usage approach

## Ex. 5 Deliberative Process (DP)

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**From:** Panger, Melissa  
**Sent:** Friday, February 16, 2018 4:19 PM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>  
**Subject:** Fwd: Usage approach

FYI... from Claire

Sent from my iPhone

Begin forwarded message:

**From:** "Paisley-Jones, Claire" <Paisley-Jones.Claire@epa.gov>  
**Date:** February 16, 2018 at 4:17:29 PM EST  
**To:** "Panger, Melissa" <Panger.Melissa@epa.gov>  
**Subject:** RE: Usage approach

## Ex. 5 Deliberative Process (DP)

## **Ex. 5 Deliberative Process (DP)**

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**From:** Panger, Melissa  
**Sent:** Friday, February 16, 2018 3:38 PM  
**To:** Paisley-Jones, Claire <[Paisley-Jones.Claire@epa.gov](mailto:Paisley-Jones.Claire@epa.gov)>  
**Subject:** Usage approach

## **Ex. 5 Deliberative Process (DP)**

# **Ex. 5 Deliberative Process (DP)**

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Melissa Panger, Ph.D.  
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Environmental Fate and Effects Division  
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[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)





Message

---

**From:** Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]  
**Sent:** 6/16/2020 5:04:13 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** RE: ESA PCT Questions

Thanks.

---

**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Tuesday, June 16, 2020 12:57 PM  
**To:** Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: ESA PCT Questions

We are using the max upper and average uniform. We use both, but the max/upper drives if it is NLAA/LAA and the rest is used in the weight of evidence to characterize the strength of the call. We are not using the minimum lower now, but we do generate the output.

---

**From:** Bohaty, Rochelle <Bohaty.Rochelle@epa.gov>  
**Sent:** Tuesday, June 16, 2020 12:15 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** ESA PCT Questions

For the ESA PCT work what method is ESA moving forward with using the max or uniform? Mark had the following comment in emails circulating earlier today. Just checking to make sure we are all on the same page.

“For distribution method we would follow the lead for what’s being done for ESA. I forget the current approach but I thought it was use the uniform and characterize by max but that might be reversed. I don’t believe they are moving forward with the lower distribution.”

## Message

**From:** Spatz, Dana [Spatz.Dana@epa.gov]  
**Sent:** 8/27/2019 4:02:06 PM  
**To:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]  
**CC:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Fingers crossed on the "done!"

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:56 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

I'll update to "upper bound predicted pesticide concentrations" and send back to ME, with Colleen's comments and tweaks.  
And, done!

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:53 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Cc:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** Re: Atrazine ESA vs FIFRA Table

### Ex. 5 Deliberative Process (DP)

Sent from my iPhone

> On Aug 27, 2019, at 8:42 AM, Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov> wrote:  
>  
> Colleen, I agree with your comments and edits.

### Ex. 5 Deliberative Process (DP)

> -----Original Message-----

> **From:** Louie-Juzwiak, Rosanna  
> **Sent:** Tuesday, August 27, 2019 11:38 AM  
> **To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> **Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> **Subject:** RE: Atrazine ESA vs FIFRA Table

### Ex. 5 Deliberative Process (DP)

return

> -----Original Message-----

> **From:** Spatz, Dana <Spatz.Dana@epa.gov>  
> **Sent:** Tuesday, August 27, 2019 11:34 AM  
> **To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> **Cc:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> **Subject:** Re: Atrazine ESA vs FIFRA Table

> Thanks Colleen. I think this looks good.

> Sent from my iPhone

>> On Aug 27, 2019, at 8:29 AM, Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov> wrote:

>> So, I think that language is OK in the table for that row for ESA, although Rosanna if you think we should be less specific on the return frequency or averaging periods for the first two columns I think

### Ex. 5 Deliberative Process (DP)

>> I do have two other edits in the attached table, which I think are kind of important points to clarify. (I only looked at table, not the rest of the document again.)

>>  
>> -----Original Message-----  
>> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
>> Sent: Tuesday, August 27, 2019 11:14 AM  
>> To: Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

>> -----Original Message-----  
>> From: Louie-Juzwiak, Rosanna  
>> Sent: Tuesday, August 27, 2019 11:13 AM  
>> To: Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>

## Ex. 5 Deliberative Process (DP)

>>  
>> -----Original Message-----  
>> From: Spatz, Dana <Spatz.Dana@epa.gov>  
>> Sent: Tuesday, August 27, 2019 11:08 AM  
>> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>  
>> What do you suggest it say?  
>>  
>> -----Original Message-----  
>> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
>> Sent: Tuesday, August 27, 2019 11:07 AM  
>> To: Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>  
>> This is what the row currently says:  
>>  
>> FIFRA Assessment: Predicted pesticide concentration expected to occur once every 10 years  
>>  
>> Atrazine Assessment: Predicted or measured site-specific 60-day average concentrations  
>>  
>> -----Original Message-----  
>> From: Spatz, Dana <Spatz.Dana@epa.gov>  
>> Sent: Tuesday, August 27, 2019 11:03 AM  
>> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>  
>> The exposure row does say predicted or measured for atz, so monitoring is covered.  
>>  
>> -----Original Message-----  
>> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
>> Sent: Tuesday, August 27, 2019 11:00 AM  
>> To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
>> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: FW: Atrazine ESA vs FIFRA Table  
>>

## Ex. 5 Deliberative Process (DP)

>> -----Original Message-----  
>> From: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
>> Sent: Tuesday, August 27, 2019 10:51 AM  
>> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table

>>  
>> Thanks Rosanna. I simplified the table and made it consistent with the level of detail in paper and combined it into one document. Could the team review and let me know if you have any final suggestions? Thanks!  
>>  
>> Marietta  
>>  
>>  
>>  
>> -----Original Message-----  
>> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
>> Sent: Tuesday, August 27, 2019 8:57 AM  
>> To: Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
>> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>  
>> Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.  
>>  
>> Rosanna  
>>  
>> -----Original Message-----  
>> From: Anderson, Brian <Anderson.Brian@epa.gov>  
>> Sent: Tuesday, August 27, 2019 7:53 AM  
>> To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
>> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>  
>> Thanks guys - I had a couple of edits on the table. Please let me know if you have any questions.  
>>  
>> Brian  
>>  
>>  
>>  
>> -----Original Message-----  
>> From: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
>> Sent: Monday, August 26, 2019 4:41 PM  
>> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
>> Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: RE: Atrazine ESA vs FIFRA Table  
>>  
>> Hi Marietta -  
>>  
>> Here is the draft summary table with our last edits incorporated. That last version inadvertently got sent still in track changes (iPhone malfunction!) - we are sending the clean one here.  
>>  
>> Thanks!  
>> Colleen  
>>  
>> -----Original Message-----  
>> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
>> Sent: Monday, August 26, 2019 4:23 PM  
>> To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
>> Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
>> Subject: Atrazine ESA vs FIFRA Table  
>>  
>> Hi Marietta,  
>>  
>> Attached is the draft summary table- please let me know if you have any comments or questions.  
>>  
>>  
>> <Atrazine Background ESA v. FIFRA 8.27.2019\_cmr.docx>

**From:** Spatz, Dana [Spatz.Dana@epa.gov]  
**Sent:** 8/27/2019 3:55:49 PM  
**To:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]; Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:43 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Colleen, I agree with your comments and edits.

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna  
**Sent:** Tuesday, August 27, 2019 11:38 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:34 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** Re: Atrazine ESA vs FIFRA Table

Thanks Colleen. I think this looks good.

Sent from my iPhone

> On Aug 27, 2019, at 8:29 AM, Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov> wrote:

## Ex. 5 Deliberative Process (DP)

>  
> -----Original Message-----

> **From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> **Sent:** Tuesday, August 27, 2019 11:14 AM  
> **To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> **Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> **Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

> -----Original Message-----

> **From:** Louie-Juzwiak, Rosanna  
> **Sent:** Tuesday, August 27, 2019 11:13 AM  
> **To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>

> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

> -----Original Message-----

> From: Spatz, Dana <Spatz.Dana@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:08 AM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table

> What do you suggest it say?

> -----Original Message-----

> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:07 AM  
> To: Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table

> This is what the row currently says:

> FIFRA Assessment: Predicted pesticide concentration expected to occur once every 10 years  
> Atrazine Assessment: Predicted or measured site-specific 60-day average concentrations

> -----Original Message-----

> From: Spatz, Dana <Spatz.Dana@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:03 AM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table

> The exposure row does say predicted or measured for atz, so monitoring is covered.

> -----Original Message-----

> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:00 AM  
> To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: FW: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

> -----Original Message-----

> From: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
> Sent: Tuesday, August 27, 2019 10:51 AM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table

> Thanks Rosanna. I simplified the table and made it consistent with the level of detail in paper and combined it into one document. Could the team review and let me know if you have any final suggestions? Thanks!

> Marietta

> -----Original Message-----

> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Tuesday, August 27, 2019 8:57 AM  
> To: Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table

> Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.  
>  
> Rosanna  
>  
> -----Original Message-----  
> From: Anderson, Brian <Anderson.Brian@epa.gov>  
> Sent: Tuesday, August 27, 2019 7:53 AM  
> To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
>  
> Thanks guys - I had a couple of edits on the table. Please let me know if you have any questions.  
>  
> Brian  
>  
>  
>  
> -----Original Message-----  
> From: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Sent: Monday, August 26, 2019 4:41 PM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
> Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
>  
> Hi Marietta -

## Ex. 5 Deliberative Process (DP)

>  
> Thanks!  
> Colleen  
>  
> -----Original Message-----  
> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Monday, August 26, 2019 4:23 PM  
> To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
> Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: Atrazine ESA vs FIFRA Table  
>  
> Hi Marietta,  
>  
> Attached is the draft summary table- please let me know if you have any comments or questions.  
>  
>  
> <Atrazine Background ESA v. FIFRA 8.27.2019\_cmr.docx>

Message

---

**From:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]  
**Sent:** 8/27/2019 3:03:50 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** RE: Atrazine ESA vs FIFRA Table

We're okay - we have time.

-----Original Message-----

**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:03 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Give me one minute - I am looking at it now... had another change also...

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:00 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** FW: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Sent:** Tuesday, August 27, 2019 10:51 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Thanks Rosanna. I simplified the table and made it consistent with the level of detail in paper and combined it into one document. Could the team review and let me know if you have any final suggestions? Thanks!

Marietta

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 8:57 AM  
**To:** Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.

Rosanna

-----Original Message-----

**From:** Anderson, Brian <Anderson.Brian@epa.gov>  
**Sent:** Tuesday, August 27, 2019 7:53 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Thanks guys - I had a couple of edits on the table. Please let me know if you have any questions.

Brian



-----Original Message-----

From: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
Sent: Monday, August 26, 2019 4:41 PM  
To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Hi Marietta -

Here is the draft summary table with our last edits incorporated. That last version inadvertently got sent still in track changes (iPhone malfunction!) - we are sending the clean one here.

Thanks!  
Colleen

-----Original Message-----

From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
Sent: Monday, August 26, 2019 4:23 PM  
To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: Atrazine ESA vs FIFRA Table

Hi Marietta,

Attached is the draft summary table- please let me know if you have any comments or questions.

Message

---

**From:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]  
**Sent:** 8/27/2019 2:59:44 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** FW: Atrazine ESA vs FIFRA Table  
**Attachments:** Atrazine Background ESA v. FIFRA 8.27.2019.docx

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Sent:** Tuesday, August 27, 2019 10:51 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

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**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.

Rosanna

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**Sent:** Tuesday, August 27, 2019 7:53 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Cc:** Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
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Brian

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**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Cc:** Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

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Sent: Monday, August 26, 2019 4:23 PM  
To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: Atrazine ESA vs FIFRA Table

Hi Marietta,

Attached is the draft summary table- please let me know if you have any comments or questions.

Message

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**From:** Peck, Charles [Peck.Charles@epa.gov]  
**Sent:** 10/22/2019 4:12:17 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**Subject:** RE: QA file  
**Attachments:** QC MAGtool spreadsheet\_10-16-19.xlsx

Hi Colleen,

Attached is the file you sent with my comments in Column E.

**Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

Maybe we can talk later this afternoon.

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 10244  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

---

**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Monday, October 21, 2019 11:07 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** QA file

Hi Chuck –

Here is the QA file I wanted you to look at.

**Ex. 5 Deliberative Process (DP)**

**Ex. 5 Deliberative Process (DP)**

Any feedback is appreciated!!

Thanks –  
Colleen

Message

---

**From:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Sent:** 2/6/2018 3:50:37 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**Subject:** RE: BE streamline method development

## Ex. 5 Deliberative Process (DP)

---

**From:** Rossmeisl, Colleen  
**Sent:** Tuesday, February 06, 2018 10:42 AM  
**To:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: BE streamline method development

Thanks Elizabeth! Those are good points to bring up and I looked at your comments in the document. I should probably

## Ex. 5 Deliberative Process (DP)

---

**From:** Donovan, Elizabeth  
**Sent:** Tuesday, February 06, 2018 10:33 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: BE streamline method development

## Ex. 5 Deliberative Process (DP)

Thanks!

e

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**Sent:** Tuesday, February 06, 2018 10:04 AM  
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**Subject:** RE: BE streamline method development

No problem!

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Ah! I'm doing it right now... sorry about that!

e

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**Sent:** Tuesday, February 06, 2018 10:03 AM  
**To:** Donovan, Elizabeth <[Donovan.Elizabeth@epa.gov](mailto:Donovan.Elizabeth@epa.gov)>  
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PS – Did you ever get a chance to look over that obligate list I sent? ☺

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**Sent:** Tuesday, February 06, 2018 10:02 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
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Thanks!

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  - o method for applying usage data to aquatics

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Thanks!  
Colleen

\*\*\*\*\*

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**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>  
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**Subject:** RE: Slide for adjusting overlap -BEAD

Thanks for the slides Kris. My comments are similar to Chuck and Melissa's...

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

Just some ideas that could fit with what we already have in place...

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**Sent:** Tuesday, February 06, 2018 7:49 AM

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**Subject:** RE: Slide for adjusting overlap -BEAD

OK... my bad, I just saw the national-level numbers... I'd be more comfortable going that route with state-level data.



Melissa Panger, Ph.D.  
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Thanks, Kris... these are looking good. Just a few initial comments in addition to Chuck's:

## Ex. 5 Deliberative Process (DP)

Thanks,  
Melissa

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Thanks for taking a first cut at the slides. They look pretty good. Here are my thoughts/comments.

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I revised the slides Jen sent so that they are the first draft of a presentation to BEAD and EFED scientists. See red text for areas that may need some more discussion. Note that slides 12 and 13 are my simple examples intended to depict how we apply the usage data. I also added a slide for the spray drift. Please review and comment on this.

If there's room on the agenda tomorrow, we can talk through these slides at tomorrow's BE meeting.

Thanks,  
Kris

Message

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**Sent:** 2/6/2018 3:33:25 PM  
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**Subject:** RE: BE streamline method development  
**Attachments:** Copy of Species obligate relationships 2018 update.xlsx

# Ex. 5 Deliberative Process (DP)

e

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e

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Thanks!

Colleen

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Sounds good – do you prefer Skype or phone line? ☺

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**To:** Garber, Kristina <Garber.Kristina@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Odenkirchen, Edward <Odenkirchen.Edward@epa.gov>; Kanarek, Andrew <Kanarek.Andrew@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Harwood, Douglas <harwood.douglas@epa.gov>; Wendel, Christina <Wendel.Christina@epa.gov>  
**Subject:** BE streamline method development

Hi all –

We will meet today and continue working down the list of items as provided at last meeting:

- Running list of discussion items (we will not cover all these at one meeting, but will continue to work through this list, and other items, at other ESA meetings)
  - o method for applying usage data to drift
  - o method for applying usage data to aquatics

## Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

Folks have also been working on slides for the upcoming usage meeting with BEAD that we will also try to discuss today (probably fall under item #1 - #3 on agenda). I have attached them, plus the comments and discussion that have been circulating around them as well, which is also relevant to today's discussion.

Thanks!  
Colleen

\*\*\*\*\*

**From:** Peck, Charles  
**Sent:** Tuesday, February 06, 2018 8:28 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>  
**Subject:** RE: Slide for adjusting overlap -BEAD

Thanks! Was thinking of direct spray and indirect spray as opposed to the effects...

**From:** Rossmeisl, Colleen  
**Sent:** Tuesday, February 06, 2018 8:26 AM  
**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>  
**Subject:** RE: Slide for adjusting overlap -BEAD

The direct spray drift distances are based on thresholds associated with the species, whereas the indirect are based on thresholds for organisms with an indirect relationship. The model knows what organisms have an indirect relationship with the species, and whether it is general or obligate and applies the relevant threshold for that indirect species to calculate the spray drift distance (but only uses mortality thresholds).

For the initial screen, we would be use whichever is greater.

**From:** Peck, Charles  
**Sent:** Tuesday, February 06, 2018 8:20 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>  
**Subject:** RE: Slide for adjusting overlap -BEAD

Hi Colleen,

Thanks for example, this helps clarify some of the discussions we've had regarding drift. Can you explain the difference between Direct Spray Drift and Indirect Spray Drift?

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA

Room 12314  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

**From:** Rossmeisl, Colleen  
**Sent:** Tuesday, February 06, 2018 8:16 AM  
**To:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>  
**Subject:** RE: Slide for adjusting overlap -BEAD

Thanks for the slides Kris. My comments are similar to Chuck and Melissa's...

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

**From:** Panger, Melissa  
**Sent:** Tuesday, February 06, 2018 7:49 AM  
**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>  
**Subject:** RE: Slide for adjusting overlap -BEAD

## Ex. 5 Deliberative Process (DP)

Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

**From:** Peck, Charles

**Sent:** Tuesday, February 06, 2018 7:36 AM

**To:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>

**Subject:** RE: Slide for adjusting overlap -BEAD

## Ex. 5 Deliberative Process (DP)

**From:** Panger, Melissa

**Sent:** Tuesday, February 06, 2018 7:28 AM

**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>

**Subject:** RE: Slide for adjusting overlap -BEAD

Thanks, Kris... these are looking good. Just a few initial comments in addition to Chuck's:

## Ex. 5 Deliberative Process (DP)

Thanks,  
Melissa

Melissa Panger, Ph.D.  
Senior Advisor, ERB2  
Environmental Fate and Effects Division  
Office of Pesticide Programs  
USEPA

703-305-6136  
[panger.melissa@epa.gov](mailto:panger.melissa@epa.gov)

**From:** Peck, Charles

**Sent:** Tuesday, February 06, 2018 6:38 AM

**To:** Garber, Kristina <Garber.Kristina@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>

**Subject:** RE: Slide for adjusting overlap -BEAD

Hi Kris,

Thanks for taking a first cut at the slides. They look pretty good. Here are my thoughts/comments.

# Ex. 5 Deliberative Process (DP)

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 12314  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

**From:** Garber, Kristina

**Sent:** Monday, February 05, 2018 7:21 PM

**To:** Peck, Charles <Peck.Charles@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>

**Subject:** RE: Slide for adjusting overlap -BEAD

Hello all,

I revised the slides Jen sent so that they are the first draft of a presentation to BEAD and EFED scientists. See red text for areas that may need some more discussion. Note that slides 12 and 13 are my simple examples intended to depict how we apply the usage data. I also added a slide for the spray drift. Please review and comment on this.

If there's room on the agenda tomorrow, we can talk through these slides at tomorrow's BE meeting.

Thanks,  
Kris



Message

---

**From:** Judkins, Donna [Judkins.Donna@epa.gov]  
**Sent:** 1/10/2018 4:45:18 PM  
**To:** White, Katrina [White.Katrina@epa.gov]; Housenger, Justin [Housenger.Justin@epa.gov]; Went, Stephen [Wente.Stephen@epa.gov]; Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]; Sappington, Keith [Sappington.Keith@epa.gov]; Yingling, Hannah [Yingling.Hannah@epa.gov]; Eckel, William [Eckel.William@epa.gov]  
**CC:** Orrick, Greg [Orrick.Greg@epa.gov]; Sankula, Sujatha [Sankula.Sujatha@epa.gov]; Nguyen, Khue [Nguyen.Khue@epa.gov]; Villanueva, Philip [Villanueva.Philip@epa.gov]; Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]; Blankinship, Amy [Blankinship.Amy@epa.gov]; Holmes, Jean [Holmes.Jean@epa.gov]; Arnold, Elyssa [Arnold.Elyssa@epa.gov]; Shelby, Andrew [Shelby.Andrew@epa.gov]; Anderson, Brian [Anderson.Brian@epa.gov]  
**Subject:** Re: Pyrethroid Assessment Public Comments

I agree with Katrina's comment -- nice job of summarizing the comments!

I noticed that one of the comments on p. 17 concerns 9 papers and patent documents that were sent in by the Center for Biological Diversity and the center is urging that EPA must access synergism and comply with duties under ESA. We did include the synergism enhancement factors from the PBO document, which didn't really affect the assessment because LOC's were already exceeded for invertebrates. I haven't yet read the papers but I think the comment is broader than just the known synergists, like PBO and MGK-264. I think it deals with mixtures, in general.

---

**From:** White, Katrina  
**Sent:** Friday, January 5, 2018 9:35:20 AM  
**To:** Housenger, Justin; Went, Stephen; Judkins, Donna; Donovan, Elizabeth; Sappington, Keith; Yingling, Hannah; Eckel, William  
**Cc:** Orrick, Greg; Sankula, Sujatha; Nguyen, Khue; Villanueva, Philip; Rossmeisl, Colleen; Spatz, Dana; Blankinship, Amy; Holmes, Jean; Arnold, Elyssa; Shelby, Andrew; Anderson, Brian  
**Subject:** RE: Pyrethroid Assessment Public Comments

Nice summary Justin. Thank you.

---

Katrina White  
Risk Assessment Process Leader  
Environmental Risk Branch IV  
Environmental Fate & Effects Division

703-308-4536  
[White.katrina@epa.gov](mailto:White.katrina@epa.gov)

---

**From:** Housenger, Justin  
**Sent:** Thursday, January 04, 2018 8:12 AM  
**To:** Went, Stephen <Wente.Stephen@epa.gov>; Judkins, Donna <Judkins.Donna@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; White, Katrina <White.Katrina@epa.gov>; Sappington, Keith <Sappington.Keith@epa.gov>; Yingling, Hannah <Yingling.Hannah@epa.gov>; Eckel, William <Eckel.William@epa.gov>  
**Cc:** Orrick, Greg <Orrick.Greg@epa.gov>; Sankula, Sujatha <Sankula.Sujatha@epa.gov>; Nguyen, Khue <Nguyen.Khue@epa.gov>; Villanueva, Philip <Villanueva.Philip@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Holmes, Jean <Holmes.Jean@epa.gov>; Arnold, Elyssa <Arnold.Elyssa@epa.gov>; Shelby, Andrew <Shelby.Andrew@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>  
**Subject:** Pyrethroid Assessment Public Comments

Hi EFED Pyrethroid Review Team,

Several weeks back, we met to discuss PRD's proposed mitigation on the various modules of the EFED streamlined pyrethroid assessment. As you may remember, it was largely a label clean up and consistency focused proposal without any rate reductions or other analyses that would require a significant amount of EFED re-work. Since that time, PRD has collated the major comments from the public comment period on the assessment. Some of the high level ones (which were conserved across several different entities making the comments), are summarized below, with the full table attached.

#### **Repeats of PWG comment points**

- Concerns with EPA's overly conservative assessment/overstates risk;
- 'Credible/higher tier studies' not incorporated into PRA;
- EPA should use best available science
- EPA should refine its work by modeling not only the most sensitive species;

#### **Realistic use and modeling**

- PRA ignores real field conditions/modeled unrealistic use patterns/should include more realistic agronomic parameters including percent cropped area/percent crop treated
- Should model the EPA-mandated label requirement for vegetative buffer strips, which have been demonstrated to be effective
- Did not consider restrictions (mitigations) already required on labels in modeling
- Comparing monitoring with modeled data is not appropriate
- Residential use scenario is new and un-reviewed

#### **Hydrophobicity**

- PRA does not take into account the unique chemical properties of pyrethroids - hydrophobic, and sorbed to soil/OM, leaving only a small amount for run-off, not bioavailable

#### **Other**

- Synergism (CBD)
- Should include spot ons and other uses in DtD (CA water agencies)/EEC's underestimated
- Rice fields not a source of drinking water for wildlife
- Almond specific info for modeling

## **Ex. 5 Deliberative Process (DP)**

Please let me know if you have any questions on this, as well as if you think an EFED internal meeting ahead of the discussion with PRD is warranted.

Thanks,  
Justin



Message

---

**From:** Bohaty, Rochelle [Bohaty.Rochelle@epa.gov]  
**Sent:** 5/19/2020 1:55:10 PM  
**To:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]; Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**CC:** Hafner, Sarah [hafner.sarah@epa.gov]; Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]; Summers, Holly [summers.holly@epa.gov]  
**Subject:** RE: Herbicide ESA: Use/Usage Discussions

## Ex. 5 Deliberative Process (DP)

-----Original Appointment-----

**From:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Sent:** Wednesday, May 13, 2020 5:40 PM  
**To:** Donovan, Elizabeth; Rossmeisl, Colleen; Connolly, Jennifer; Suarez, Mark; Paisley-Jones, Claire; Doucoure, Cynthia; Otte, Briana; Muela, Stephen; Sinnathamby, Sumathy; Garber, Kristina  
**Cc:** Bohaty, Rochelle; Hafner, Sarah; Louie-Juzwiak, Rosanna; Spatz, Dana; Summers, Holly; Farruggia, Frank; Kiernan, Brian; Crews, Kristy; Peck, Charles; Kyle, Lee; Corbin, Mark  
**Subject:** Herbicide ESA: Use/Usage Discussions  
**When:** Tuesday, May 19, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** Microsoft Teams Meeting  
**Importance:** High

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

e

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[Join Microsoft Teams Meeting](#)

## Ex. 6 – Conference Code

[Local numbers](#) | [Reset PIN](#) | [Learn more about Teams](#) | [Meeting options](#)

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Message

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**From:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]  
**Sent:** 3/31/2020 2:25:41 PM  
**To:** Rossmeisl, Colleen [Rossmeisl.Colleen@epa.gov]  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)  
**Attachments:** N-1095e MRID 50846501.pdf

Hi Colleen,

Sorry, I misunderstood - attached is the buprofezin study.

## Ex. 5 Deliberative Process (DP)

Thanks!

---

**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Tuesday, March 31, 2020 10:18 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

Hi Rosanna –

## Ex. 5 Deliberative Process (DP)

Sorry for all the questions!!

Thanks –  
Colleen

---

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Monday, March 30, 2020 9:07 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

## Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

**From:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Sent:** Monday, March 30, 2020 9:03 AM  
**To:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

You don't have the study? I thought you would have to have it in order to send to the contractor (thinking back to my RAPL stint...) I just got through that DER and would be helpful to see the study.

**From:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>  
**Sent:** Monday, March 30, 2020 9:01 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

Hmm.. I will ask PRD to see if they can figure out the status. I have not found another reference in OPPIN, so it at least does not appear to be an MRID assignment problem...

Will try to think of a solution in the mean time as well so that we can get this logged out, but it may be a bigger issue that involves ITRMD.

**From:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Sent:** Monday, March 30, 2020 8:16 AM  
**To:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

## Ex. 5 Deliberative Process (DP)

**From:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>  
**Sent:** Monday, March 30, 2020 7:43 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

If it's at all easier to keep rolling on DERs, there is also the flonicamid batch

**From:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Sent:** Monday, March 30, 2020 7:34 AM  
**To:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>  
**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

No I will not fight you for kasugamycin :) - I just looked back, and Nicole sent a draft of the assessment for review in October (!), so I assume we are working off of that? Just let me know what I should do, I am a little out of touch with that one...

Thanks for the feedback!  
Colleen

**From:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>  
**Sent:** Monday, March 30, 2020 7:28 AM

**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

Hi Colleen,

## Ex. 5 Deliberative Process (DP)

Thanks and let me know if anything is needed (other than more hours in a day),  
-rosanna

---

**From:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

**Sent:** Monday, March 30, 2020 7:22 AM

**To:** Louie-Juzwiak, Rosanna <[Louie-Juzwiak.Rosanna@epa.gov](mailto:Louie-Juzwiak.Rosanna@epa.gov)>

**Subject:** RE: Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)

Hi Rosanna –

Just trying to get my head around all this...

## Ex. 5 Deliberative Process (DP)

Thanks!  
Colleen

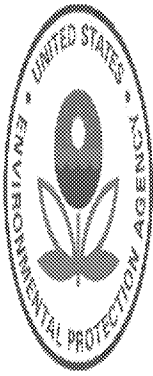
---

**From:** Teamwork Projects Reports <[reports@teamwork.com](mailto:reports@teamwork.com)>

**Sent:** Monday, March 30, 2020 7:04 AM

**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>

**Subject:** Daily Project Report for Colleen Rossmeisl (Monday 30 Mar 2020)



30 March, 2020

## Hi Colleen, here's your Daily Report for Monday

Mon 30 Mar 2020 - *Environmental Risk Branch III*

### Milestones

<b>Feb</b>	<b>Flonicamid: New Toxicity Studies DERs</b> Finalize DERs post-DRA <i>ERB3 Workload</i> 45 days ago	<b>Mar</b>	<b>Penoxsulam: Updated Chronic Larval Draft DER MRID 50634802</b> 119031 Penoxsulam 50634802 Link to draft DER on SAN: Z:\Contractor D... <i>ERB3 Workload</i> 3 days ago
<b>14</b> Friday		<b>27</b> Friday	
<b>Mar</b>	<b>Penoxsulam: Post RR Data Review</b> DP 448655 and 451104 Contractor Draft DER: Z:\Contractor Draft DERs\E... <i>ERB3 Workload</i> 10 days ago	<b>Mar</b>	<b>Valifenalate: Updated Chronic Larval DER Addendum MRID 49807347</b> 128200 Valifenalate 49807347 - used in RA Link to draft Addendum on S... <i>ERB3 Workload</i> 3 days ago
<b>20</b> Friday		<b>27</b> Friday	
<b>Mar</b>	<b>Buprofezin: DER - Chronic Larval Bee (voluntary)</b> DP 453337, DER - post ID chronic larval bee MRID 50846501 Link to Draf... <i>ERB3 Workload</i> 4 days ago	<b>Mar</b>	<b>Valifenalate: Updated Chronic Larval DER Addendum MRID 50385501</b> 128200 Valifenalate 50385501 Link to draft Addendum on SAN: Z:\Contra...
<b>26</b> Thursday		<b>27</b> Friday	

[View 2 more Milestones](#)


## Tasks

### ERB3 Workload ( ERB3)

#### Simazine ECOTOX from ORD June 21, 2019

 You + 3 other Simazine ECOTOX from ORD June 21, 2019 Due: 21 June, 2019


#### Atrazine: Voluntary Studies for RTC PRA

 You + 2 other Atrazine: Voluntary Studies Review for RTC PRA Due: 14 October, 2019

#### BE: Simazine

 You + 1 other Plant Variability Project, Update PAT Due: 31 December, 2019

#### Tebupirimphos/Phostebupirim: RR1 PID Support

 You + 2 other Tebupirimphos/Phostebupirim: Public Comment Period Ends Jan. 17, 2020 Due: 17 January


#### BE: Atrazine


 You + 1 other Atrazine BE: Effects Analyses Due: 31 January

#### Atrazine: Eco & Fate DERs (See separate milestone)


 You + 2 other Atrazine: Eco & Fate DERs (see separate milestone) Due: 31 January

#### BE: Simazine


 You + 1 other Simazine BE: Effects Analyses Due: 31 January

 You + 2 other Simazine BE: Evaluate usage to determine PCT for all use sites – need BEAD input Due: 31 January


## BE: Atrazine

-  You + 3 other Atrazine BE: Evaluate usage to determine PCT for all use sites – need BEAD input Due: 3 February


## Flonicamid: New Toxicity Studies Draft DERs

-  Colleen R. Flonicamid DERs Due: 14 February


## BE: Atrazine

-  You + 3 other Atrazine BE: Effects Chapter & Exposure Chapter Development Due: 28 February


## BE: Simazine

-  You + 2 other Simazine BE: Effects Chapter & Exposure Chapter Development Due: 2 March


## Kasugamycin: New Use Ecological Assessment, if needed

-  You + 3 other Kasugamycin: New Uses Eco RA Branch Review Period Due: 17 March


## Penoxsulam: Post RR Eco DERs

-  Colleen R. Penoxsulam Eco DERs to PRD Due: 20 March

## Buprofezin: Chronic Larval Bee DER

-  Colleen R. Buprofezin: Chronic Larval Bee DER to PRD Due: 26 March

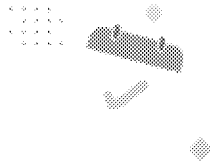
## Chronic Larval Bee DER Update: Penoxsulam MRID 50634802

-  Colleen R. Penoxsulam: Updated Chronic Larval DER MRID 50634802 Due: 27 March

[View more Tasks](#)

## Events





## No Events

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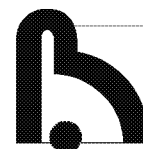
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**BioChem**  
**agrar**

Labor für biologische und  
chemische Analytik GmbH

## FINAL REPORT

**Buprofezin technical – Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)**

### Guideline(s) covered

Guidance Document on Honey Bee Larval Toxicity Test following Repeated Exposure,  
Series on Testing and Assessment, No. 239, OECD (2016)

### Test item

Buprofezin technical

### Project identification

BioChem project No.: 18 48 BLC 0021

### Study completion date

28 January 2019

### Sponsor

Nihon Nohyaku Co., Ltd.  
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### Study Monitor

Junko Ikuta  
Nihon Nohyaku Co., Ltd.

### Study Director

Kathrin Scheller  
BioChem agrar GmbH

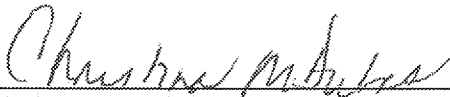
### Test Facility and Test Site for Analytical Phase

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Submitter:

  
Christina M. Dubas  
Nichino America, Inc.

Date:

5/16/19



## STATEMENT OF COMPLIANCE WITH GOOD LABORATORY PRACTICE

BioChem project: 18 48 BLC 0021  
Test item: Buprofezin technical  
Study Director: Kathrin Scheller  
Study title: Buprofezin technical – Repeated exposure of honey bee larvae (*Apis mellifera* L.) under laboratory conditions (*in vitro*)  
Study completion date: 28 January 2019

The study was performed in compliance with the "Chemikaliengesetz" (Chemicals Act) of the Federal Republic of Germany, "Anhang 1" (Annex 1), (BGBl. I, 2013, amended 2016) based on the OECD Principles of Good Laboratory Practice (as revised in 1997; Environment Directorate, Organisation for Economic Cooperation and Development, Paris 1998), and the Directive 2004/10/EC of 11 February 2004 amending Council Directive 87/18/EEC, which are accepted by regulatory authorities throughout the European Union, the United States of America (FDA and EPA) and Japan (MHLW, MAFF and METI) on the basis of intergovernmental agreements as well as with the OECD Consensus Document No. 13 (2002).

The verification of the homogeneity of the honey bee larvae feeding solution containing buprofezin was conducted under non-GLP conditions.

The documented data correspond to the experimentally determined values.  
There were no circumstances that may have adversely affected the quality or integrity of the study.

Study Director:  
Ecotoxicology  
BioChem agrar GmbH  
04827 Machern OT Gerichshain, Germany

  
Kathrin Scheller  
28 Jan. 2019  
Date

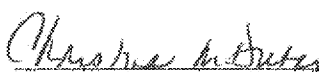
Test Facility Management:  
BioChem agrar GmbH  
04827 Machern OT Gerichshain, Germany

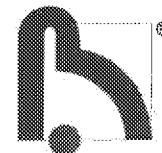
  
Gernot Renner  
28 Jan. 2019  
Date

For the Sponsor:

  
Junko Ikuta  
Nihon Nohyaku Co.  
30 Jan. 2019  
Date

Submitter:

  
Christina M. Dubas  
Nichino America, Inc.  
6-May 2019  
Date



## QUALITY ASSURANCE STATEMENT

BioChem project: 18 48 BLC 0021  
Test item: Buprofezin technical  
Study Director: Kathrin Scheller  
Study title: Buprofezin technical – Repeated exposure of honey bee larvae (*Apis mellifera* L.) under laboratory conditions (*in vitro*)

Procedures of this study were periodically inspected by the Quality Assurance Manager and the results reported to the Study Director and to the Test Facility Management.

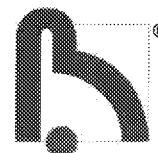
Inspections/audits	Dates of inspections/audits	Dates of report
Study plan	02 Aug 2018	02 Aug 2018
Amendment No. 1 to the study plan	20 Nov 2018	20 Nov 2018
Experiments	31 Aug 2018	31 Aug 2018
Final report (draft) <sup>1</sup>	10 Jan 2019	10 Jan 2019
Final report (final check)	28 Jan 2019	28 Jan 2019

<sup>1</sup> Without finalized analytical phase report

So far, as can be reasonably established, the methods described and results incorporated in this report accurately reflect the raw data produced during the study.

Quality Assurance Manager:  
BioChem agrar GmbH  
04827 Machern OT Gerichshain, Germany

  
Christiane Kunath  
Date: 28 Jan 2019



## CERTIFICATION

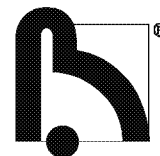
I / we, the undersigned, hereby declare that this study was performed under my / our supervision according to the procedures described herein, and that this report presents a true and accurate record of the results obtained.

Study Director:

Kathrin Scheller

BioChem agrar  
Labor für biologische und chemische Analytik GmbH  
Kupferstraße 6  
04827 Machern OT Gerichshain, Germany  
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28 Jan 2015 K. Scheller  
Date, Signature

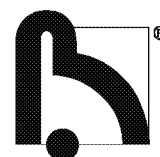


## LIST OF AMENDMENTS TO THE STUDY PLAN

Amendment No.	Date	Concerning/Reason
1	23 Nov 2018	Contact details: Due to organisational reasons, another person had to act as Lead QA. Analytical phase: Details of the analytical phase needed to be amended.

## LIST OF DEVIATIONS TO THE STUDY PLAN

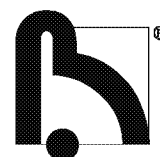
Deviation No.	Date	Concerning/Reason and Impact
1	21 Jan 2019	Climate conditions: On D20 and D21 the humidity was below the range of $60 \pm 10\%$ (for less than 2 hours). As there was no influence observed in adult emergence in the control group, no impact on the outcome of the study is assumed.



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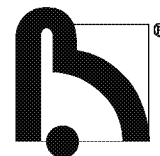


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## EXECUTIVE SUMMARY

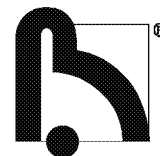
In a chronic toxicity test, honey bee (*Apis mellifera* L.) larvae were repeatedly exposed to Buprofezin technical. The toxicity of the test item was determined at total doses<sup>1</sup> of 58.04, 31.91, 20.25, 8.73 and 0.85 µg a.i./larva (nominal doses were 100.18, 50.09, 25.04, 10.02 and 1.00 µg a.i./larva). The concentrations<sup>1</sup> of test item in the diet were 367.19, 201.90, 128.12, 55.21 and 5.41 mg a.i./kg food (nominal concentrations were 633.80, 316.90, 158.45, 63.38 and 6.34 mg a.i./kg food).

Additionally, further honey bee larvae were exposed to the reference item Fenoxycarb technical at a dose of 0.051 µg fenoxycarb/larva (0.32 mg a.i./kg food) as positive control. A third group of larvae served as negative control, being fed with untreated diet, and untreated diet containing acetone (solvent control), respectively.

### I. MATERIAL AND METHODS

Test item:	Buprofezin technical Batch No.: 6AD0025Z; analysed purity: 99.5 ± 0.04%
Reference item:	Fenoxycarb technical; analysed purity: 98.3% ± 0.5%
Test species:	Honey bee <i>Apis mellifera</i> ssp. <i>Buckfast</i> (Hymenoptera, Apoidea), synchronized first instar larvae; derived from three healthy and queen-right colonies; source: BioChem agrar GmbH, Germany.
Test design:	<p>One-day-old honeybee larvae (D1) of <i>Apis mellifera</i> L. were transferred from brood combs to polystyrene grafting cells in 48-well cell culture plates 2 days before the start of the treatment. Thereafter, larvae were exposed daily between D3 and D6 to Buprofezin technical diluted in the larval food (aqueous sugar solution mixed with royal jelly 1:1) and held until the final assessment on D22. In total, 3 treatment groups were set up: 5 doses of the test item, two controls of which one was untreated and one contained acetone (solvent control), and 1 dose of the reference item with 3 replicates per dose and 12 larvae per replicate, each.</p> <p>Assessments of larval mortality were done 24, 48, 72, 96, 120 hours after the first application (D4, D5, D6, D7, and D8, respectively). Pupal mortality was assessed on D15. Adult emergence and the weight of emerged bees was assessed on D22. Additionally, other observations such as small body size or large quantities of remaining food after 120 hours (on D8) were noted.</p> <p>In the analytical phase of the study the concentration of the active substance in each final diet of the test item group and in the solvent control was determined for samples taken directly after preparation (0hrs) and taken after incubation under exposure conditions (24hrs).</p>
Endpoints:	Cumulative mortality (D8, D15), adult emergence (D22), emergence bee weight (D22), qualitative observations such as body size and remaining food (D8)

<sup>1</sup> Based on measured values



Test concentrations: Control AC: diet B/C (50% aqueous sugar solution with 50% royal jelly)  
Solvent control BC: diet B/C containing 0.5% (v/v) acetone

Test item: treated diet B on D3 and treated diet C on D4 - D6

Nominal dose/concentration (administered):

Treatment ID	Cumulative dose [ $\mu\text{g a.i./larva}$ ]		Concentration [ $\text{mg a.i./kg food}$ ]	
	nominal <sup>2</sup>	measured <sup>3</sup>	nominal <sup>2</sup>	measured <sup>3</sup>
AT	100.18	58.04	633.80	367.19
BT	50.09	31.91	316.90	201.90
CT	25.04	20.25	158.45	128.12
DT	10.02	8.73	63.38	55.21
ET	1.00	0.85	6.34	5.41

Reference item: treated diet B/C with a dose of 0.051  $\mu\text{g}$  fenoxycarb/larva  
(corresponding concentration: 0.32 mg fenoxycarb/kg food)

Test conditions: Temperature: 34 °C – 35 °C  
Relative humidity: D1-D8: 92 – 98%  
D8-D15: 81 – 85%  
D15-D22: 40 – 60%  
Photoperiod: Darkness (except during assessments)  
Food: 50% aqueous sugar solution and 50% royal jelly (on D3-D6)

Statistics: Descriptive statistics; Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm (D8 and D15) and Step-down Cochran-Armitage test (D22) for evaluation of mortality data and No Observed Effect Level determination (NOED/NOEC for D8, D15, and D22) ( $\alpha = 0.05$ , one-sided greater).  
Weibull analysis for calculation of  $\text{ED}_{50}/\text{EC}_{50}$  values (for D22) of the test item along with the 95% confidence limits.  
Williams' Multiple sequential t-test procedure ( $\alpha = 0.05$ , one-sided smaller) for calculation of differences in emergence bee weight between solvent control and test item treatments, and Student's t-test ( $\alpha = 0.05$ , one-sided smaller) for determination of differences in emergence body weight between untreated and solvent control.

## II. RESULTS AND DISCUSSION

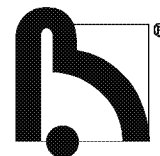
On D8 of the test (120 hours after first exposure), a mortality of 5.6% was observed in the control AC and of 2.8% in the solvent control BC.

In the test item treatment group, cumulative mortalities ranged between 11.1% and 16.7% (corrected for solvent control mortality: 8.6% and 14.3%). Cumulative mortality in the reference item treatment group was 27.8% (corrected for solvent control mortality: 25.7%).

Remaining food on D8 was observed in the test item treatment groups BT (dose of 31.91  $\mu\text{g a.i./larva}$ ), CT (dose of 20.25  $\mu\text{g a.i./larva}$ ) and DT (8.73  $\mu\text{g a.i./larva}$ ) in one larva each, indicating not being an effect of test item treatment. Two larvae of the reference item treatment group also showed incomplete food ingestion.

<sup>2</sup> Doses/concentrations are based on nominal content of a.i. in the final diets. For details, see Study plan (Appendix 14).

<sup>3</sup> Doses/concentrations are based on analysed content of a.i. in the diets. For details of calculation of doses/concentrations see Appendix 10.



Between D8 and D15, pupal mortality was 17.7% in the control AC and 14.1% in the solvent control BC. Pupal mortality in the test item treatment group was 35.6%, 21.9%, 15.8%, 9.1% and 6.4% from the highest to the lowest dose/concentration (corrected for solvent control mortality: 24.9%, 9.1%, 1.9%, 0.0% and 0.0%). Pupal mortality in the reference item treatment group was 48.9% (corrected for solvent control mortality: 40.5%).

After 22 days, the adult emergence rate in the untreated control AC was 77.8% (mortality 22.2%) and 80.6% (mortality 19.4%) in the solvent control BC. In the test item treatment group, adult emergence rates were 41.7%, 61.1%, 72.2%, 77.8% and 80.6% (from the highest to the lowest dose/concentration). The respective cumulative mortality was 58.3%, 38.9%, 27.8%, 22.2% and 19.4% (corrected for solvent control mortality: 48.3%, 24.1%, 10.3%, 3.4% and 0.0%). Mortality in the reference item treatment group was 100% on D22.

Statistically significant differences in larval mortality (D3-D8), as well as in pupal mortality (D8-D15) were not observed between the solvent control and any treatment group.

Statistically significant differences in adult emergence/cumulative mortality on D22 compared to the solvent control occurred in the test item treatment groups AT (58.04 µg a.i./larva) and BT (31.91 µg a.i./larva), indicating a NOED of 20.25 µg a.i./larva (NOEC of 128.12 mg a.i./kg food).

Statistically significant differences in emergence bee body weight occurred in the test item treatment groups AT (58.04 µg a.i./larva), BT (31.91 µg a.i./larva) and CT (20.25 µg a.i./larva), indicating a NOED of 8.73 µg a.i./larva (NOEC of 55.21 mg a.i./kg food). There was no statistically significant difference between untreated control and solvent control.

Analytical determination of the concentration of buprofezin in final diets (fresh and incubated samples under the exposure conditions) resulted in recoveries of between 45% and 99% among the treatment groups. In detail, recoveries (average recovery of samples from fresh and incubated samples) were 83%-87% in treatment group ET, 80%-93% in treatment group DT, 72%-87% in treatment group CT, 59%-69% in treatment group BT, and 51%-65% in treatment group AT, respectively.

Because the concentrations of buprofezin in the final diets were below the range of 80%-120% in several samples, the nominal concentrations were corrected for the analysed concentrations. Details are to find in Appendix 10 (calculation of actual doses/concentrations) and Appendix 15 (analytical phase report).

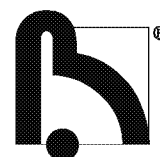
The recoveries in the fresh samples were confirmed by the recoveries in the incubated samples. Therefore, the stability of the active ingredient buprofezin in the test media was given for 24 h under the respective test conditions.

No active ingredient has been detected in the control samples. Thus, the concentrations of the specimens of the biological part of the study were verified.

The study is valid because:

1. Control mortality between D3 and D8 was  $\leq 15$  % across all control replicates (5.6% in untreated control, 2.8% in solvent control)
2. Adult emergence rate in the test item treatment group between D3 and D22 was  $\geq 70$  % across all control replicates (77.8% in untreated control, 80.6% in solvent control)
3. Adult emergence rate in the reference item treatment group between D3 and D22 was  $\leq 20$  % for larvae exposed to a total dose of 0.051 µg fenoxycarb/larva across all reference replicates (0.0%)

The results are summarised in Table 1.



**Table 1: Toxicity and sublethal effects of Buprofezin technical to *Apis mellifera* L. after repeated exposure and determination of NOED/NOEC, LD<sub>50</sub>/LC<sub>50</sub> and ED<sub>50</sub>/EC<sub>50</sub>**

Treatment group	Treatment group ID	Test rates <sup>1</sup>		On D8			On D15		On D22			
		Cumulative dose [µg a.i./larva]	Mean concentration [mg a.i./kg food]	Mean cumulative mortality of larvae D3 to D8 [%]		Mean OO [%]	Mean mortality of pupae D8-D15 [%]		Mean cumulative mortality of pupae & larvae D3-D22 [%]		Adult emergence rate [%]	Mean emergence bee weight [g]
				abs.	corr.		abs.	corr.	abs.	corr.	absolute	
Control	AC	-	-	5.6	-	0.0	17.7	-	22.2	-	77.8	0.095
	BC	-	-	2.8	-	0.0	14.1	-	19.4	-	80.6	0.096
Test item	AT	58.04	367.19	11.1	8.6	0.0	35.6	24.9	58.3	48.3	41.7*	0.085*
	BT	31.91	201.90	16.7	14.3	2.8	21.9	9.1	38.9	24.1	61.1*	0.088*
	CT	20.25	128.12	13.9	11.4	3.0	15.8	1.9	27.8	10.3	72.2	0.092*
	DT	8.73	55.21	13.9	11.4	3.0	9.1	0.0	22.2	3.4	77.8	0.097
	ET	0.85	5.41	13.9	11.4	0.0	6.4	0.0	19.4	0.0	80.6	0.090
Reference item	AR	0.051	0.32	27.8	25.7	11.1	48.9	40.5	100.0	100.0	0.0	-

	Endpoints	Larval mortality (D3-D8)	Pupal mortality (D8-D15)	Successful adult emergence (D22)	Emergence bee weight (D22)
Test item doses	LD/ED <sub>50</sub> [µg a.i./larva] (CL)	> 58.04	> 58.04	> 58.04 <sup>3</sup>	n.a.
	LD/ED <sub>20</sub> [µg a.i./larva] (CL)	> 58.04	> 58.04	29.32 (22.64-37.97) <sup>3</sup>	n.a.
	LD/ED <sub>10</sub> [µg a.i./larva] (CL)	> 58.04	> 58.04	18.39 (12.27-27.56) <sup>3</sup>	n.a.
	NOED [µg a.i./larva]	≥ 58.04 <sup>2</sup>	≥ 58.04 <sup>2</sup>	20.25 <sup>4</sup>	8.73 <sup>5</sup>
Test item concentrations	LC/EC <sub>50</sub> [mg a.i./kg food] (CL)	> 367.19	> 367.19	> 367.19 <sup>3</sup>	n.a.
	LC/EC <sub>20</sub> [mg a.i./kg food] (CL)	> 367.19	> 367.19	185.51 (143.25-240.23) <sup>3</sup>	n.a.
	LC/EC <sub>10</sub> [mg a.i./kg food] (CL)	> 367.19	> 367.19	116.38 (77.67-174.38) <sup>3</sup>	n.a.
	NOEC [mg a.i./kg food]	≥ 367.19 <sup>2</sup>	≥ 367.19 <sup>2</sup>	128.12 <sup>4</sup>	55.21 <sup>5</sup>

Results are averages based on 3 replicates, each replicate containing 12 larvae; see Appendix 3 for details

corr.: test/reference item treatment mortality corrected for solvent control (according to Schneider-Orelli 1947); negative values were set to "0"

abs.: absolute mortality as counted from the results

n.a.: not applicable

OO: Other observations (remaining food)

CL: Confidence limits (95% lower – upper)

Calculations are performed with non-rounded values

\* Statistically significant compared to the solvent control (Step-down Cochran-Armitage Test; α=0.05; one sided greater)

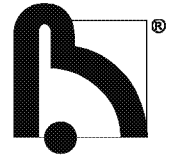
<sup>1</sup> Based on measured values of active ingredient

<sup>2</sup> Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm (α = 0.05, one-sided greater) (Appendix 5 & 6)

<sup>3</sup> Weibull analysis with linear maximum likelihood regression (Appendix 8)

<sup>4</sup> Step-down Cochran-Armitage Test Procedure (α = 0.05, one-sided greater) (Appendix 7)

<sup>5</sup> Williams' Multiple sequential t-test procedure (α = 0.05, one-sided smaller) (Appendix 9)



### **III. CONCLUSION**

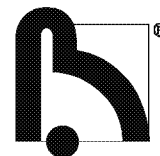
In a larval toxicity study with repeated exposure of honey bee larvae to Buprofezin technical, the  $ED_{50}$  (D22) was determined to be  $> 58.04 \mu\text{g a.i./larva}$ , which is equivalent to an  $EC_{50}$  of  $> 367.19 \text{ mg a.i./kg food}$ .

The  $ED_{20}$  (D22) was determined to be  $29.32 \mu\text{g a.i./larva}$ , which is equivalent to an  $EC_{20}$  of  $185.51 \text{ mg a.i./kg food}$ .

The  $ED_{10}$  (D22) was determined to be  $18.39 \mu\text{g a.i./larva}$ , which is equivalent to an  $EC_{10}$  of  $116.38 \text{ mg a.i./kg food}$ .

The NOED (D22) regarding adult emergence was determined to be  $20.25 \mu\text{g a.i./larva}$  and the corresponding NOEC (D22) is  $128.12 \text{ mg a.i./kg food}$ .

The NOED (D22) regarding adult bee weight after emergence was determined to be  $8.73 \mu\text{g a.i./larva}$  and the corresponding NOEC (D22) is  $55.21 \text{ mg a.i./kg food}$ .



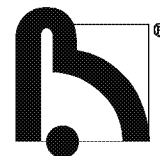
## 1. General information

### 1.1. Objective

The purpose of this study was to determine the chronic toxicity (LD/LC<sub>50/20/10</sub> for larval and pupal mortality on D8 and D15, and ED/EC<sub>50/20/10</sub>, for adult emergence rate and bee weight on D22 as well as NOED and NOEC for D8, D15 and D22) of the test item applied to honey bee larvae, *Apis mellifera* L., in an *in vitro* test after repeated oral application. The test item was administered to the larvae at a constant concentration in the diet according to their growth, within a range of five increasing doses spaced by a factor of  $\leq 3$ . Cumulative mortalities of honey bee larvae treated with the test item were assessed daily from D4 to D8. Cumulative mortalities during the pupal phase were assessed on D15. All mortalities were compared to the control. The adult emergence rate and bee body weight were assessed on D22.

### 1.2. Contact details

Sponsor address:	Nihon Nohyaku Co., Ltd. Kyobashi OM Bldg.. 19-8, Kyobashi 1-Chome, Chuo-Ku Tokyo 104-8386, Japan	
Study Monitor:	Junko Ikuta Registration Department Market Development Division Nihon Nohyaku Co., Ltd.	Phone: +81 (0) 3 6361 1411 Email: ikuta-junko@nichino.co.jp
Test Facility and Test Site for analytical phase:	BioChem agrar Labor für biologische und chemische Analytik GmbH Kupferstraße 6 04827 Machern OT Gerichshain, Germany	
Management of Test Facility and of Test Site for analytical phase:	Gernot Renner BioChem agrar GmbH	Phone: +49 (0) 34 292 863 10 Email: gernot.renner@biochemagrar.de
Study Director:	Kathrin Scheller BioChem agrar GmbH	Phone: +49 (0) 34 292-863 66 Email: kathrin.scheller@biochemagrar.de
Quality Assurance (Lead QA):	Christiane Kunath BioChem agrar GmbH	Phone: +49 (0) 34 292-863 52 Email: christiane.kunath@biochemagrar.de
Principal Investigator (analytical phase):	Anita Birke BioChem agrar GmbH	Phone: +49 (0) 34 292-863 54 Email: anita.birke@biochemagrar.de
Quality Assurance (analytical phase):	Peggy Landsmann BioChem agrar GmbH	Phone: +49 (0) 34 292-863 72 Email: peggy.landsmann@biochemagrar.de
Additional personnel:	Katharina Kleebaum Renate Haußmann Kristin Schmidt Benny-Chris Weiße Franziska Hofmann Lennart Siemann	BioChem agrar GmbH BioChem agrar GmbH BioChem agrar GmbH BioChem agrar GmbH BioChem agrar GmbH BioChem agrar GmbH



### 1.3. Time schedule

Study initiation date:	23 Aug 2018
Experimental start date:	27 Aug 2018
Experimental completion date (biological part):	17 Sept 2018
Experimental completion date (analytical phase):	30 Nov 2018
Study completion date:	28 Jan 2019

### 1.4. Test guideline

- OECD (2016), Guidance Document on Honey Bee Larval Toxicity Test following Repeated Exposure, Environment Monograph, Series on Testing and Assessment, No. 239, OECD, Paris
- Adaptations based on SCHMEHL *et al.* (2016) including: 1) diet composition (more water and less royal jelly in diets A and B), 2) a pre-pupal transfer step to a new culture plate on D7-8, and 3) changes to the rearing environment (no use of glycerol or sterilizing solution, a lid placed upon the culture plates throughout development, no emergence box).

### 1.5. Archiving

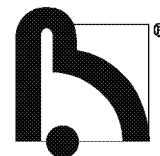
The Test Facility, BioChem agrar GmbH, will archive the following in compliance with national GLP regulations:

- All original raw data (with exception of raw data created during the analytical phase, which will be archived separately)
- Study plan (including amendments) and final report
- Documentation of inspections and examinations according to the quality assurance program
- Specifications of the staff qualification and education
- Retention samples of the test and reference items (will be archived only as long as the quality of the preparation permits re-evaluation)
- Correspondence in case of being relevant for the conduct of the study

Test site related raw data will be stored according to the local GLP requirements, concerning e.g.: specifications of the staff qualification and education.

No raw data or material relating to the study will be discarded without the sponsor's prior written consent.





## 2. Materials and methods

### 2.1. Control

The control (AC) was fed with untreated artificial diet containing 0.5% (v/v) water. An additional control treatment (BC) served as a solvent control, where the nutrient medium contained 0.5% (v/v) acetone.

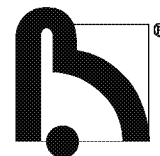
### 2.2. Test item

The Sponsor is responsible for correct test item specification and identity. The test item and all data concerning test item identification and description of its characteristics were provided by the sponsor. This characterisation was carried out by the Sponsor.

Name:	Buprofezin technical
Batch No.:	6AD0025Z
Received:	13 March 2018
Expiry date:	30 August 2022
Substance type:	Technical compound
Active ingredient:	Buprofezin
Analyzed purity:	99.5 ± 0.04%
Appearance <sup>4</sup> :	White to pale yellowish crystalline powder
Degradation:	Stable under the below described storage conditions (stability was confirmed for 2204 days)
Storage conditions:	Store at room temperature and in dark condition
Solubility in water (25 °C) <sup>1</sup> :	0.46 mg/L
Solubility in acetone (20 ~ 22 °C) <sup>1</sup> :	253000 mg/L
Vapor pressure (20 °C) <sup>1</sup> :	4.2 x 10 <sup>-5</sup> Pa
Partition coefficient (n-octanol/water) <sup>1</sup> :	Log Po/w = 4.93 (pH7)
Further details:	Certificate of Analysis of 01 Sept 2016 Safety data sheet of 06 Jan 2016

The test item not used for other studies of the sponsor (with the exception of the retention sample) will be disposed of or returned to the sponsor after completion of the study.

<sup>4</sup> According to Safety Data Sheet from 06 Jan 2016



### 2.3. Reference item (toxic standard)

Fenoxycarb was the reference substance and was applied at a rate of 0.32 mg a.i./kg (equivalent to 0.051 µg a.i./larva). Termination of the test occurred on D22.

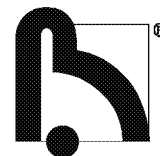
Name:	Fenoxycarb tech.
Batch No.:	775987
Received:	07 Sept 2016
Expiration date:	01 Mar 2021
Substance type:	Technical compound
Active ingredient:	Fenoxycarb
Analyzed purity:	98.3% (w/w)
Storage conditions:	Store at 20°C
Further details:	Certificate of Analysis of 15 Mar 2016 Safety Data Sheet of 05 Mar 2018

### 2.4. Chronology of the test

The application of test and reference item took place on the third, fourth, fifth and sixth day (D3 to D6) after hatch. After repeated exposure to the test item, larvae were incubated in a climate chamber, which was set to 34.5°C, and with adjusted humidity depending on the stage of development. The test conditions are described in detail in chapter 2.8 of the final report. On D22, the adult emergence was assessed. A chronology of the test is given in Table 2.

**Table 2: Chronology of the test**

Test phase	Day (D)	Description
Pre-grafting (non-GLP)	D-3	Confining of queen on comb in excluder cage in the hive
	D-2	Check for eggs; Releasing queen and confining comb again in excluder cage; incubation in the hive
	D-1	Incubation in the hive
	D0	Incubation in the hive
Grafting & pre-exposure	D1	Removing comb from the hive; grafting of L1-larvae, feeding untreated diet; incubation in climate chamber
Pre-exposure	D2	Incubation in climate chamber
Exposure	D3	Application
	D4-D6	Application; Assessment of larval mortality and of sublethal effects
Post-exposure	D7-D8	Assessment of larval mortality and of sublethal effects
	D8	Transfer of pre-pupae to cellulose tissue on a new culture plate; adjustment of climate conditions
	D8-D15	Incubation
	D15	Adjustment of climate conditions; assessment of pupal mortality and of sublethal effects
	D15-D22	Incubation
Termination	D22	Assessment of adult emergence and bee body weight



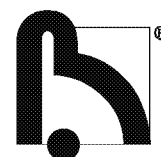
## 2.5. Test system

Test organism:	Honey bee – <i>Apis mellifera</i> L., ssp: <i>Buckfast</i> (Hymenoptera, Apoidea): First instar larvae (L1 during grafting) of queen-right colonies in good health condition were used for the test. For each test, larvae were collected from three different colonies, each representing a replicate in order to avoid genetic influences on the test outcome.
Source of the test organism:	The colonies were provided by BioChem agrar GmbH, Germany. All larvae used in the test derived from healthy (free of clinical symptoms of any disease) and queen-right bee colonies. The larvae were taken from hives that had not received treatments with chemical substances for at least one month.
Pre-treatment culturing conditions:	The bee colonies producing the larvae were held under field conditions in hives including a healthy queen. Brood in egg, larval and pupal stages as well as filled food combs (containing nectar and pollen) were present. A sufficient amount of food was present in the bee hives.
Method of producing L1 larvae:	The colonies LV2018-95, LV2018-76 and LV2018-39 were used. Each of the three colonies was treated in parallel the same way: On day -3 (D-3) the respective queen of the colony was confined on an empty brood comb, which was fitted in an excluder cage and thereafter placed in the hive. The queen laid her eggs solely on this comb. The caging time was approximately 30 h. In the afternoon of day -2 (D-2), the queen was released from the excluder cage. The comb was checked for the presence of freshly laid eggs, was confined in the excluder again in order to avoid any further egg laying, and was placed in the hive near to frames containing open brood. The eggs were incubated within the hive between day -2 (D-2) and day 1 (D1).
Grafting:	<p>On D1, the combs containing larvae were transported from the hive to an acclimatised laboratory room using a polystyrene box.</p> <p>Larvae were transferred from the combs to the cells using a suitable grafting tool (e.g. grafting needle Swiss type). During grafting, the C-shaped larvae were placed on the surface of the artificial diet within the grafting cells. Each replicate represents larvae originating from a different colony to exclude colony effects.</p> <p>The grafting was performed on a warming plate set to 35 °C.</p>

## 2.6. Feeding scheme

The aqueous sugar solutions as one component of the artificial diets were prepared prior to the test and stored in a freezer until use. The sugar solutions were mixed with royal jelly every day before each feeding occasion. Each larva was fed separately using a sterile pipette. The food drop was placed next to the larvae to avoid drowning. Before feeding, the final diets were warmed up to 34.5°C. During the process, the culture plate in operation was placed on a warming plate set to 35 °C.

The volumes and contents of diets A, B and C are presented in Table 3.



**Table 3: Feeding scheme**

Test day	1 <sup>1</sup>	2	3 <sup>2</sup>	4 <sup>2</sup>	5 <sup>2</sup>	6 <sup>2</sup>
Artificial diet	A <sup>3</sup>	-	B	C	C	C
Volume of diet per larva	20 µL	-	20 µL	30 µL	40 µL	50 µL
Composition of diets:						
Royal jelly	44.25% w/w	-	50% w/w		50% w/w	
Sugar solution	55.75% w/w		50% w/w		50% w/w	
Composition of sugar solution:						
Glucose	9.50% w/w	-	15% w/v		18% w/v	
Fructose	9.50% w/w		15% w/v		18% w/v	
Yeast extract	1.61% w/w		3% w/v		4% w/v	
Water	79.39% w/w		~ 67% w/v <sup>4</sup>		~ 60% w/v <sup>4</sup>	

<sup>1</sup> Day of grafting

<sup>2</sup> Days of application

<sup>3</sup> Diet A contained a higher amount of water in order to reduce propensity of drying out (according to SCHMEHL *et al.*, 2016).

<sup>4</sup> Approximated amount of deionized water. This value converges to the actual amount of water, which was needed for filling up glucose, fructose and yeast extract to the final volume of sugar solution.

## 2.7. Test units

Identification and randomisation:

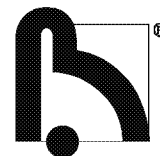
Before application, all sick or dead larvae were replaced by normally developed individuals originating from the respective colony. All plates used in the study were randomised using a scheme, which is added to the raw data. Thereafter, the plates were denoted with study number, treatment group and replicate number. Hence, it can be assumed that the study was conducted with healthy and unbiased larvae.

Type:

36 crystal polystyrene grafting cells (CNE Nicotplast, internal diameter 9 mm) were placed in three groups on each 48-well plate, which had been labelled with at least study number and treatment group replicate number. The plates were placed on an adjustable heating plate (e.g. stretching table), which was set to 35 °C. Artificial diet A was pipetted into the grafting cells, followed by placing one freshly grafted larva per cell.

Sanitary methods:

Grafting cells had been disinfected in a 70% ethanol bath for 30 minutes followed by drying of the cells under laminar flow. Sterile equipment was used (culture well plates from Nunclon™ and one-way pipette tips Eppendorf biopur). Before and during the transfer of larvae, grafting tools were disinfected in 70% ethanol regularly. Sugar solution was sterilised at a suitable filtration apparatus (mesh size: 0.20 µm) before mixing with test item or the royal jelly. The Plexiglas desiccator was cleaned with 70% ethanol. Any surface in the laboratory was disinfected with a ready to use disinfectant for medical devices (Bacillol plus). During grafting, personnel used surgical masks and gloves. After each application, glass flasks and beakers used were cleaned in a dishwasher.

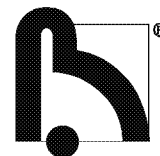


## 2.8. Test conditions

Test environment:	Climatic chamber, D1-D8: Type: Binder KMF 115 D8-D15: Type: Binder KMF 115 D15-D22: Type: Binder KBF 115
Temperature:	34 °C – 35 °C
Relative humidity:	D1-D8: 92 – 98% D8-D15: 81 – 85% D15-D22: 40 – 60%
Illumination:	Constant darkness throughout the test (diffuse artificial light only during handling and assessments)
Ventilation:	By the air-conditioning equipment of the climatic chamber
Recording:	Continuously (documented in the raw data)

## 2.9. Course of the trial

Number of larvae per replicate:	12
Number of replicates:	3 replicates of each control 3 replicates of each test item dosage 3 replicates of the reference item dose All replicates of each treatment group were placed on one culture plate.
Number of concentrations (Dose-response test):	Control group: 2 Test item treatment group: 5 Reference item treatment group: 1
Completion of the test:	After the last assessment on D22, the culture plates with all organisms participating in the test were placed in a freezer (at -18 °C) and discarded afterwards following the Test Facility's SOP.



## 2.10. Application of controls, test item and reference item

Prior to the definitive test, the solubility of test item in the aqueous sugar solution and the homogeneous distribution of the test item in the final diets were confirmed under non-GLP conditions (Appendix 16).

The test item was daily (on D3, D4, D5 and D6) dissolved in acetone<sup>5</sup>, gaining the test item base stock (BST = Stock solution A). Several dilutions (stock solutions B, C, D, E) were prepared by adding further acetone (see Appendix 1 for details). The reference item was also dissolved in acetone, gaining the reference item base stock solution, which was stored in the fridge for further use on D4-D6. At each application day, a further dilution step was done gaining stock solution R.

The final feeding solutions for application (AT, BT, CT, DT, ET, AR) were prepared by mixing the previously compounded Stock solutions A to E and R with diet B (used on D3) and diet C (used on D4-D6) in a fixed volumetric relation (volumetric part of stock solutions being 0.5% of the final feeding solutions). Table 4 shows the amounts of test and reference item, respectively, which were mixed into diet B/diet C and offered to each larva individually on four successive days. Larvae of the control treatment received untreated diet (untreated control AC), and untreated diet containing 0.5% acetone (solvent control BC).

To ensure a homogeneous distribution of the test item/reference item within the larval food, the final diets were placed on a multitube vortex shaker (Multitube vortex shaker DVX-2500, VWR) at 2500 rpm for 5 minutes at room temperature. In order to eliminate small, stable bubbles that potentially could affect the uptake of feeding solution by the larvae, the final diets were shortly centrifuged at 3000 rpm for 20 sec. Then, the final test/reference item feeding solutions were heated up in a water bath set to 34.5 °C for about 30 min. Before feeding, the final diets were vigorously shaken on a vortex shaker ("lab dancer" S40, VWR) in order to eliminate probable fractionation of the food components and to keep the test item homogeneously distributed. Emerging bubbles produced by the second shaking step were big enough in size to not affect the uptake of feeding solution by the larvae.

The larvae were fed with a defined quantity of the respective test item concentration (concentration series). This test was performed by way of single larva feeding according the scheme described in Table 3. The order of application was the following: controls, test item (from the lowest to the highest concentration) and finally reference item.

For a detailed description of the preparation of test solutions, see Appendix 1.

**Table 4: Applied dosages in the chronic larval toxicity test**

Treatment group	Test solution ID	Item to be applied	Cumulative dose [µg total a.i./larva]		Concentration [mg a.i./kg food]	
			nominal <sup>1</sup>	measured <sup>2</sup>	nominal <sup>1</sup>	measured <sup>2</sup>
Controls	AC	Diet B/C + 0.5% v/v water	-	-	-	-
	BC	Diet B/C + 0.5% v/v acetone	-	-	-	-
Test item	AT	Buprofezin technical	100.18	58.04	633.80	367.19
	BT		50.09	31.91	316.90	201.90
	CT		25.04	20.25	158.45	128.12
	DT		10.02	8.73	63.38	55.21
	ET		1.00	0.85	6.34	5.41
Reference item	AR	Fenoxycarb technical	0.051	-	0.32	-

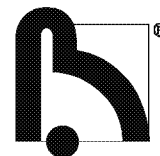
<sup>1</sup> According to study plan (Appendix 14), applied in 0.5% acetone

<sup>2</sup> Based on measured values, applied in 0.5% acetone

Calculations of test item concentrations were based on a density of 1.13 g/mL of diet B/C.

Calculations were performed with non-rounded values.

<sup>5</sup> A solvent was required due to the poor solubility of the test item in water (0.46 mg/L). Solubility in acetone is 253000 mg/L. Further details on solubility/homogeneity test shown in Appendix 16.



## 2.11. Analysis of test item solutions

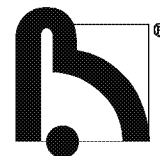
Samples of each final diet (AT to ET and solvent control BC) were taken in duplicates for chemical analysis daily, after preparation on D3, D4, D5, and D6 (see Table 5). Before sampling, the diet was filled in empty queen cups, simulating the feeding procedure. There was one sampling directly after filling the cups (at 0hrs). A second sampling was performed 24hrs after filling the cups to check for stability of the test item in the artificial diet under the exposure conditions ( $34.5 \pm 0.5$  °C,  $95 \pm 5\%$  rH). Therefore, those samples were incubated for 24hrs under the same conditions the larvae need for their development (Table 6).

The analysis is part of this study (analytical phase) and was conducted at BioChem agrar GmbH. The samples were stored at  $\leq -18^{\circ}\text{C}$  until handover to the Principal Investigator of the analytical phase on 27 Nov 2018 (analysis samples) and on 28 Nov 2018 (retain samples). After finalisation of the study, remaining samples will be disposed of.

**Table 5: Specimen identification (sampling after 0hrs, not incubated)**

Specimen identification <sup>1</sup>		Sampling time	Matrix	Specimen description
Analysis sample	Retain sample			
18BLC0021-D3-BC-A	18BLC0021-D3-BC-R	29 Aug 2018	Final diet	Solvent control
18BLC0021-D3-AT-A	18BLC0021-D3-AT-R	29 Aug 2018	Final diet	AT
18BLC0021-D3-BT-A	18BLC0021-D3-BT-R	29 Aug 2018	Final diet	BT
18BLC0021-D3-CT-A	18BLC0021-D3-CT-R	29 Aug 2018	Final diet	CT
18BLC0021-D3-DT-A	18BLC0021-D3-DT-R	29 Aug 2018	Final diet	DT
18BLC0021-D3-ET-A	18BLC0021-D3-ET-R	29 Aug 2018	Final diet	ET
18BLC0021-D4-BC-A	18BLC0021-D4-BC-R	30 Aug 2018	Final diet	Solvent control
18BLC0021-D4-AT-A	18BLC0021-D4-AT-R	30 Aug 2018	Final diet	AT
18BLC0021-D4-BT-A	18BLC0021-D4-BT-R	30 Aug 2018	Final diet	BT
18BLC0021-D4-CT-A	18BLC0021-D4-CT-R	30 Aug 2018	Final diet	CT
18BLC0021-D4-DT-A	18BLC0021-D4-DT-R	30 Aug 2018	Final diet	DT
18BLC0021-D4-ET-A	18BLC0021-D4-ET-R	30 Aug 2018	Final diet	ET
18BLC0021-D5-BC-A	18BLC0021-D5-BC-R	31 Aug 2018	Final diet	Solvent control
18BLC0021-D5-AT-A	18BLC0021-D5-AT-R	31 Aug 2018	Final diet	AT
18BLC0021-D5-BT-A	18BLC0021-D5-BT-R	31 Aug 2018	Final diet	BT
18BLC0021-D5-CT-A	18BLC0021-D5-CT-R	31 Aug 2018	Final diet	CT
18BLC0021-D5-DT-A	18BLC0021-D5-DT-R	31 Aug 2018	Final diet	DT
18BLC0021-D5-ET-A	18BLC0021-D5-ET-R	31 Aug 2018	Final diet	ET
18BLC0021-D6-BC-A	18BLC0021-D6-BC-R	01 Sept 2018	Final diet	Solvent control
18BLC0021-D6-AT-A	18BLC0021-D6-AT-R	01 Sept 2018	Final diet	AT
18BLC0021-D6-BT-A	18BLC0021-D6-BT-R	01 Sept 2018	Final diet	BT
18BLC0021-D6-CT-A	18BLC0021-D6-CT-R	01 Sept 2018	Final diet	CT
18BLC0021-D6-DT-A	18BLC0021-D6-DT-R	01 Sept 2018	Final diet	DT
18BLC0021-D6-ET-A	18BLC0021-D6-ET-R	01 Sept 2018	Final diet	ET

<sup>1</sup> Specimens used in the analytical phase are described in the analytical phase report (Appendix 15).



**Table 6: Specimen identification (sampling after 24hrs, incubated)**

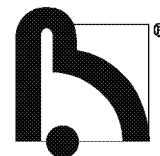
Specimen identification <sup>1</sup>		Sampling time	Matrix	Specimen description
Analysis sample	Retain sample			
18BLC0021-D3-BC-24hr-A	18BLC0021-D3-BC-24hr-R	30 Aug 2018	Final diet	Solvent control
18BLC0021-D3-AT-24hr-A	18BLC0021-D3-AT-24hr-R	30 Aug 2018	Final diet	AT
18BLC0021-D3-BT-24hr-A	18BLC0021-D3-BT-24hr-R	30 Aug 2018	Final diet	BT
18BLC0021-D3-CT-24hr-A	18BLC0021-D3-CT-24hr-R	30 Aug 2018	Final diet	CT
18BLC0021-D3-DT-24hr-A	18BLC0021-D3-DT-24hr-R	30 Aug 2018	Final diet	DT
18BLC0021-D3-ET-24hr-A	18BLC0021-D3-ET-24hr-R	30 Aug 2018	Final diet	ET
18BLC0021-D4-BC-24hr-A	18BLC0021-D4-BC-24hr-R	31 Aug 2018	Final diet	Solvent control
18BLC0021-D4-AT-24hr-A	18BLC0021-D4-AT-24hr-R	31 Aug 2018	Final diet	AT
18BLC0021-D4-BT-24hr-A	18BLC0021-D4-BT-24hr-R	31 Aug 2018	Final diet	BT
18BLC0021-D4-CT-24hr-A	18BLC0021-D4-CT-24hr-R	31 Aug 2018	Final diet	CT
18BLC0021-D4-DT-24hr-A	18BLC0021-D4-DT-24hr-R	31 Aug 2018	Final diet	DT
18BLC0021-D4-ET-24hr-A	18BLC0021-D4-ET-24hr-R	31 Aug 2018	Final diet	ET
18BLC0021-D5-BC-24hr-A	18BLC0021-D5-BC-24hr-R	01 Sept 2018	Final diet	Solvent control
18BLC0021-D5-AT-24hr-A	18BLC0021-D5-AT-24hr-R	01 Sept 2018	Final diet	AT
18BLC0021-D5-BT-24hr-A	18BLC0021-D5-BT-24hr-R	01 Sept 2018	Final diet	BT
18BLC0021-D5-CT-24hr-A	18BLC0021-D5-CT-24hr-R	01 Sept 2018	Final diet	CT
18BLC0021-D5-DT-24hr-A	18BLC0021-D5-DT-24hr-R	01 Sept 2018	Final diet	DT
18BLC0021-D5-ET-24hr-A	18BLC0021-D5-ET-24hr-R	01 Sept 2018	Final diet	ET
18BLC0021-D6-BC-24hr-A	18BLC0021-D6-BC-24hr-R	02 Sept 2018	Final diet	Solvent control
18BLC0021-D6-AT-24hr-A	18BLC0021-D6-AT-24hr-R	02 Sept 2018	Final diet	AT
18BLC0021-D6-BT-24hr-A	18BLC0021-D6-BT-24hr-R	02 Sept 2018	Final diet	BT
18BLC0021-D6-CT-24hr-A	18BLC0021-D6-CT-24hr-R	02 Sept 2018	Final diet	CT
18BLC0021-D6-DT-24hr-A	18BLC0021-D6-DT-24hr-R	02 Sept 2018	Final diet	DT
18BLC0021-D6-ET-24hr-A	18BLC0021-D6-ET-24hr-R	02 Sept 2018	Final diet	ET

<sup>1</sup> Specimens used in the analytical phase are described in the analytical phase report (Appendix 15).

## 2.12. Test parameters

Mortality:	Number of dead larvae/pupae (an immobile larva or one which did not react to contact stimulus was noted as dead); daily on D4 to D8 (larval mortality), on D15 (pupal mortality: larvae that had not transformed into pupae on D15 were noted as dead)
Adult emergence:	Number of adult bees on D22
Emerged body weight:	Weight of adult bees that survived on D22
Other observations:	To aid in the interpretation of mortality data; e.g., presence of unconsumed food or morphological differences in comparison to the control; noted during mortality assessment on D8





### 2.13. Results evaluation

For each dose/concentration the corrected mortality was calculated according to ABBOTT (1925), modified by SCHNEIDER-ORELLI (1947), following the formula in case control mortality had occurred:

$$M_{\text{corr}} [\%] = \frac{(M_t - M_c)}{(100\% - M_c)} \times 100 \%$$

$M_{\text{corr}}$  = corrected mortality [%]

$M_c$  = mortality of the control group [%]

$M_t$  = mortality of the test group [%]

For statistical calculation of the mortality/emergence results and for determination of the NOEC/NOED, the Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm was used for data from D8 and D15 and the Step-down Cochran-Armitage test was used for data from D22. The accepted significance level was  $\alpha = 0.05$  (one-sided greater).

Weibull analysis was used for calculation of the ED<sub>50</sub>/EC<sub>50</sub> values (for D22) of the test item along with the 95% confidence limits.

Williams' Multiple sequential t-test procedure ( $\alpha = 0.05$ , one-sided smaller) was used for calculation of differences in emergence bee weight between solvent control and test item treatments, and Student's t-test ( $\alpha = 0.05$ , one-sided smaller) was used for determination of differences in emergence body weight between untreated and solvent control.

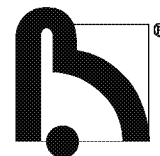
The statistical calculations were performed with the computer program ToxRat Professional 3.2.1 (RATTE, 2015).

### 2.14. Validity criteria

Cumulative mortality in the control:  $\leq 15\%$  for larvae across all control replicates for control (between D3 and D8)

Adult emergence rate in the control:  $\geq 70\%$  for *Apis mellifera* L. across all control replicates (between D3 and D22)

Cumulative mortality in the reference item treatment group:  $\leq 20\%$  for larvae exposed to a total of 0.051  $\mu\text{g}$  fenoxycarb/larva across all reference replicates (between D3 and D8)



### 3. Results and discussion

#### 3.1. Validity of the study

Cumulative mortality in the controls: 5.6% mortality (on D8) of larvae across all replicates in the untreated control AC, validity criterion was met  
 2.8% mortality (on D8) of larvae across all replicates in the solvent control BC, validity criterion was met

Adult emergence rate in the controls: 77.8% adult emergence in untreated control AC for *Apis mellifera* L. across all replicates (on D22), validity criterion was met  
 80.6% adult emergence in solvent control BC for *Apis mellifera* L. across all replicates (on D22), validity criterion was met

Adult emergence rate in the reference item treatment group: 0.0% adult emergence (on D22) of larvae across all replicates exposed to a total of 0.051 µg fenoxycarb/larva, validity criterion was met

#### 3.2. Findings

Range finder and determination of solubility and homogeneity (non-GLP):

A preliminary range finder was performed under non-GLP conditions to determine the definitive dosages, whose results are not reported in this final report. Additionally, the solubility of test item in the aqueous sugar solution and the homogeneous distribution of test item in the final diet was confirmed (Appendix 16).

Cumulative mortality on D8:

On D8 of the test (120 hours after first exposure), a mortality of 5.6% was observed in the control AC and of 2.8% in the solvent control BC.

In the test item treatment group, cumulative mortalities ranged between 11.1% and 16.7% (corrected for solvent control mortality: 8.6% and 14.3%). Cumulative mortality in the reference item treatment group was 27.8% (corrected for solvent control mortality: 25.7%).

For details, see Table 7.

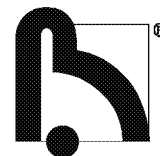
Pupal mortality:

Between D8 and D15, pupal mortality was 17.7% in the control AC and 14.1% in the solvent control BC. Pupal mortality in the test item treatment group was 35.6%, 21.9%, 15.8%, 9.1% and 6.4% from the highest to the lowest dose/concentration (corrected for solvent control mortality: 24.9%, 9.1%, 1.9%, 0.0% and 0.0%). Pupal mortality in the reference item treatment group was 48.9% (corrected for solvent control mortality: 40.5%).

For details, see Table 7.

Adult emergence:

After 22 days, the adult emergence rate in the untreated control AC was 77.8% (mortality 22.2%) and 80.6% (mortality 19.4%) in the solvent control BC. In the test item treatment group, adult emergence rate were 41.7%, 61.1%, 72.2%, 77.8% and 80.6% (from the highest to the lowest dose/concentration). The respective cumulative mortality was 58.3%, 38.9%, 27.8%, 22.2% and 19.4%



(corrected for control mortality: 48.3%, 24.1%, 10.3%, 3.4% and 0.0%). Mortality in the reference item treatment group was 100% on D22.

For details, see Table 7.

Statistically significant differences in larval mortality (D3-D8) as well as in pupal mortality (D8-D15) were not observed between the solvent control and any treatment group.

Statistically significant differences in adult emergence/cumulative mortality (D3-D22) compared to the solvent control occurred in the test item treatment groups AT (58.04 µg a.i./larva) and BT (31.91 µg a.i./larva), indicating a NOED of 20.25 µg a.i./larva (NOEC of 128.12 mg a.i./kg food).

Statistically significant differences in emergence bee body weight occurred in the test item treatment groups AT (58.04 µg a.i./larva), BT (31.91 µg a.i./larva) and CT (20.25 µg a.i./larva), indicating a NOED of 8.73 µg a.i./larva (NOEC of 55.21 mg a.i./kg food). There was no statistically significant difference between untreated control and solvent control.

#### Other observations:

Remaining food on D8 was observed in the test item treatment groups BT (dose of 31.91 µg a.i./larva), CT (dose of 20.25 µg a.i./larva) and DT (8.73 µg a.i./larva) in one larva each, indicating not being an effect of test item treatment. Two larvae of the reference item treatment group also showed incomplete food ingestion.

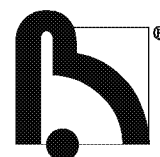
#### Concentration of a.i. in analysed samples of final diets:

Analytical determination of the concentration of buprofezin in final diets (fresh and incubated samples under the exposure conditions) resulted in recoveries of between 45% and 99% among the treatment groups. In detail, recoveries (average recovery of samples from fresh and incubated samples) were 83%-87% in treatment group ET, 80%-93% in treatment group DT, 72%-87% in treatment group CT, 59%-69% in treatment group BT, and 51%-65% in treatment group AT, respectively.

Because the concentrations of buprofezin in the final diets were below the range of 80%-120% in several samples, the nominal concentrations were corrected for the analysed concentrations. Details are to find in Appendix 10 (calculation of actual doses/concentrations) and Appendix 15 (analytical phase report).

The recoveries in the fresh samples were confirmed by the recoveries in the incubated samples. Therefore, the stability of the active ingredient buprofezin in the test media was given for 24 h under the respective test conditions.

No active ingredient has been detected in the control samples. Thus, the concentrations of the specimens of the biological part of the study were verified.



**Table 7: Toxicity and sublethal effects of Buprofezin technical to *Apis mellifera* L. after repeated exposure**

Treatment group	Treatment group ID	Test rates <sup>1</sup>		On D8			On D15		On D22			
		Cumulative dose [µg a.i./larva]	Mean concentration [mg a.i./kg food]	Mean cumulative mortality of larvae D3 to D8 [%]		Mean OO [%]	Mean mortality of pupae D8-D15 [%]		Mean cumulative mortality of pupae & larvae D3-D22 [%]		Adult emergence rate [%]	Mean emergence bee weight [g]
				abs.	corr.		abs.	corr.	abs.	corr.	absolute	
Control	AC	-	-	5.6	-	0.0	17.7	-	22.2	-	77.8	0.095
	BC	-	-	2.8	-	0.0	14.1	-	19.4	-	80.6	0.096
Test item	AT	58.04	367.19	11.1	8.6	0.0	35.6	24.9	58.3	48.3	41.7*	0.085*
	BT	31.91	201.90	16.7	14.3	2.8	21.9	9.1	38.9	24.1	61.1*	0.088*
	CT	20.25	128.12	13.9	11.4	3.0	15.8	1.9	27.8	10.3	72.2	0.092*
	DT	8.73	55.21	13.9	11.4	3.0	9.1	0.0	22.2	3.4	77.8	0.097
	ET	0.85	5.41	13.9	11.4	0.0	6.4	0.0	19.4	0.0	80.6	0.090
Reference item	AR	0.051	0.32	27.8	25.7	11.1	48.9	40.5	100.0	100.0	0.0	-

Results are averages based on 3 replicates, each replicate containing 12 larvae; see Appendix 3 for details

corr.: test/reference item treatment mortality corrected for solvent control (according to Schneider-Orelli 1947);

negative values were set to "0"

abs.: absolute mortality as counted from the results

OO: Other observations (remaining food)

CL: Confidence limits (95% lower – upper)

Calculations are performed with non-rounded values

\* Statistically significant compared to the solvent control (Step-down Cochran-Armitage Test;  $\alpha=0.05$ ; one sided greater)

<sup>1</sup> Based on measured values of active ingredient

**Table 8: Statistical outcome of the chronic toxicity test**

	Endpoints	Larval mortality (D3-D8)	Cumulative pupal mortality (D8-D15)	Successful adult emergence (D22)	Emergence bee weight (D22)
Test item doses	LD/ED <sub>50</sub> [µg a.i./larva] (CL)	> 58.04	> 58.04	> 58.04 <sup>2</sup>	n.a.
	LD/ED <sub>20</sub> [µg a.i./larva] (CL)	> 58.04	> 58.04	29.32 (22.64-37.97) <sup>2</sup>	n.a.
	LD/ED <sub>10</sub> [µg a.i./larva] (CL)	> 58.04	> 58.04	18.39 (12.27-27.56) <sup>2</sup>	n.a.
	NOED [µg a.i./larva]	≥ 58.04 <sup>1</sup>	≥ 58.04 <sup>1</sup>	20.25 <sup>3</sup>	8.73 <sup>4</sup>
Test item concentrations	LC/EC <sub>50</sub> [mg a.i./kg food] (CL)	> 367.19	> 367.19	> 367.19 <sup>2</sup>	n.a.
	LC/EC <sub>20</sub> [mg a.i./kg food] (CL)	> 367.19	> 367.19	185.51 (143.25-240.23) <sup>2</sup>	n.a.
	LC/EC <sub>10</sub> [mg a.i./kg food] (CL)	> 367.19	> 367.19	116.38 (77.67-174.38) <sup>2</sup>	n.a.
	NOEC [mg a.i./kg food]	≥ 367.19 <sup>1</sup>	≥ 367.19 <sup>1</sup>	128.12 <sup>3</sup>	55.21 <sup>4</sup>

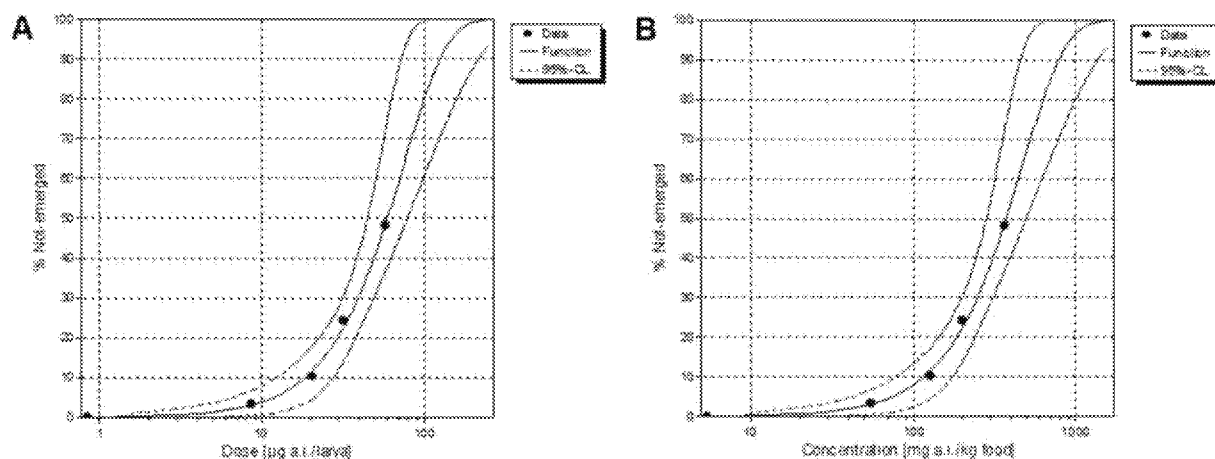
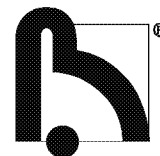
n.a.: not applicable

<sup>1</sup> Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm ( $\alpha = 0.05$ , one-sided greater) (Appendix 5 & 6)

<sup>2</sup> Weibull analysis with linear maximum likelihood regression) (Appendix 8)

<sup>3</sup> Step-down Cochran-Armitage Test Procedure ( $\alpha = 0.05$ , one-sided greater) (Appendix 7)

<sup>4</sup> Williams' Multiple sequential t-test procedure ( $\alpha = 0.05$ , one-sided smaller) (Appendix 9)



**Fig. 1:** Dose-effect curve (A) and Concentration-effect curve (B) showing the influence of the test item on emergence of the introduced honey bee larvae as observed after 22 d.

### 3.3. Conclusions

The toxicity on honey bee larvae was tested under laboratory conditions after repeated exposure to Buprofezin technical.

All validity criteria were met (mortality in controls on D8, adult emergence in the controls and reference item treatment group on D22).

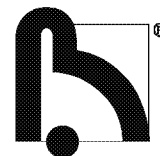
The ED<sub>50</sub> (D22) was determined to be > 58.04 µg a.i./larva, which is equivalent to an EC<sub>50</sub> of > 367.19 mg a.i./kg food.

The ED<sub>20</sub> (D22) was determined to be 29.32 µg a.i./larva, which is equivalent to an EC<sub>20</sub> of 185.51 mg a.i./kg food.

The ED<sub>10</sub> (D22) was determined to be 18.39 µg a.i./larva, which is equivalent to an EC<sub>10</sub> of 116.38 mg a.i./kg food.

The NOED (D22) regarding adult emergence was determined to be 20.25 µg a.i./larva and the corresponding NOEC (D22) is 128.12 mg a.i./kg food.

The NOED (D22) regarding adult bee weight after emergence is determined to be 8.73 µg a.i./larva and the corresponding NOEC (D22) is 55.21 mg a.i./kg food.



## 4. References

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*Translation:*

Chemicals Act in the version published on 28 August 2013 (Federal Law Gazette I p. 3498, 3991), as last amended by article 1 of the Regulation of 22 June 2016 (Federal Law Gazette I p. 1479).

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The application of the OECD Principles of GLP to the Organization and Management of Multi-Site Studies (ENV/JM/MONO(2002)9).

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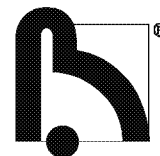
*Translation:*

SCHNEIDER-ORELLI O.: Entomological practical course. 1947. H.R. Sauerlander. Aarau. Switzerland.

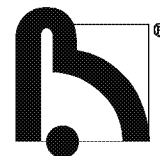
## 5. Distribution of the final report

Study Director: original

Study Monitor: electronic copy



## **6. Appendices section**



## **Appendix 1: Preparation of test solutions and diets**

### **1 Preparation of ASS (prior to test start)**

Aqueous sugar solutions ASS-B and ASS-C were prepared on 27 July 2018 und stored deep frozen until needed in the project. Defrosted ASS was mixed with Royal Jelly on the day of usage to produce the feeding solutions (diet B and diet C).

Diet A was freshly prepared on the day of grafting (D1), which was 27 Aug 2018.

#### Preparation of ASS-A (used on D1)

- Dissolving 0.36 g of yeast extract, 2.12 g of glucose and 2.12 g of fructose in 17.72 g deionized water yielding aqueous sugar solution A (ASS-A)

#### Preparation of ASS-B (used on D3)

- Weighing 15.0 g of yeast extract, 75.0 g of glucose and 75.0 g of fructose
- Dissolving in deionized water to a total volume of 500 mL yielding aqueous sugar solution B (ASS-B)
- Sterilizing by passing through a 0.22 µm vacuum filtration apparatus

#### Preparation of ASS-C (used on D4, D5, D6)

- Weighing 40.0 g of yeast extract, 180.0 g of glucose and 180.0 g of fructose
- Dissolving in deionized water to a total volume of 1000 mL yielding aqueous sugar solution C (ASS-C)
- Sterilizing by passing through a 0.22 µm vacuum filtration apparatus

### **2 Preparation of feeding solutions (diets) for D1 and D3-D6**

Preparation of Diet A: Mixing ASS-A with royal jelly at a ratio of 44.25% : 55.75% (based on w/w)

- Density of Diet A: 1.13 g/cm<sup>3</sup>

Preparation of Diet B: Mixing ASS-B with royal jelly at a ratio of 1:1 (based on w/w)

- Density of Diet A: 1.13 g/cm<sup>3</sup>

Preparation of Diet C: Mixing ASS-C with royal jelly at a ratio of 1:1 (based on w/w)

- Density of Diet A: 1.13 g/cm<sup>3</sup>

### **3 Preparation of the control solutions (AC and BC) on D3-D6**

Preparation of final diet AC on D3: Adding 36.4 µL of deionized water to 8.0 g of diet B

Preparation of final diet BC on D3: Adding 36.4 µL of acetone to 8.0 g of diet B

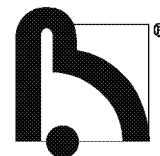
- Applied volume on D3: 20 µL AC/BC per larva (individual feeding)

Preparation of final diet AC on D4-D6: Adding 36.4 µL of deionized water to 8.0 g of diet C

Preparation of final diet BC on D4-D6: Adding 36.4 µL of acetone to 8.0 g of diet C

- Applied volume on D4: 30 µL AC/BC per larva (individual feeding)
- Applied volume on D5: 40 µL AC/BC per larva (individual feeding)
- Applied volume on D6: 50 µL AC/BC per larva (individual feeding)





## Appendix 1 (continued): Preparation of test solutions

### 4 Preparation of test item feeding solutions (AT-ET) on D3 – D6

- Weighing 0.281 g Buprofezin technical
- Dissolving in 2 mL acetone, resulting in a 14.050% (w/v) base stock solution
- Preparing stock solutions A – E by adding further acetone (see Table T1)

#### *T1: Dilution scheme and concentration of test item in the acetone stock solutions*

mL	of stock or dilution	filled up with acetone to (mL)	resulting stock or dilution	% w/v	µg a.i./µL
2	Base stock	2	StA	14.05000	139.798
1	StA	2	StB	7.02500	69.899
1	StB	2	StC	3.51250	34.949
0.8	StC	2	StD	1.40500	13.980
0.2	StD	2	StE	0.14050	1.398

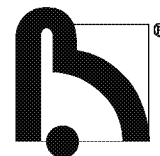
Calculated using non-rounded values

- On D3, adding 36.4 µL of stock A – E to each 8.0 g of diet B, applying 20 µL spiked diet per larva
- On D4, D5 and D6, adding 36.4 µL of stock A – E to each 8.0 g of diet C, applying 30 µL, 40 µL and 50 µL spiked diet per larva, respectively
- Preparation details for diet B and diet C see above

#### *T2: Amount of applied active substance during the test\**

	[µg a.i./larva]	[mg a.i./kg food]	Dilution factor
AT	<b>100.18</b>	<b>633.80</b>	-
BT	<b>50.09</b>	<b>316.90</b>	2.00
CT	<b>25.04</b>	<b>158.45</b>	2.00
DT	<b>10.02</b>	<b>63.38</b>	2.50
ET	<b>1.00</b>	<b>6.34</b>	10.00

\* Based on study plan (Appendix 14)



## Appendix 1 (continued): Preparation of test solutions

### 5 Preparation of reference item solution (AR)

- Weighing 0.038 g Fenoxycarb tech.
- Filling up to 25 mL with acetone resulting in a 0.152 % (w/v) fenoxycarb base stock solution
- Preparing stock solution R according to the table below

#### *T3: Concentration of reference item in acetone stock solution*

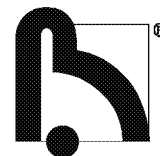
mL	of stock or dilution	filling up to (mL)	resulting stock or dilution	% w/v	a.i. [µg /µL]
<b>0.472</b>	Fenoxycarb base stock	<b>10</b>	Stock R	0.00717	0.071

Calculated using non-rounded values

- On D3, adding 36.4 µL of Stock R to 8.0 g of diet B, applying 20 µL spiked diet per larva
- On D4, D5 and D6, adding 36.4 µL of Stock R to 8.0 g of diet C, applying 30 µL, 40 µL and 50 µL spiked diet per larva, respectively
- Preparation details for diet B and diet C see above

#### *T4: Amount of applied fenoxycarb during the test*

	[µg a.i./larva]	[mg a.i./kg food]
AR	<b>0.051</b>	0.320



## Appendix 2: Specifications of used material

### 1 Royal jelly

Details:	Royal jelly fresh
Supplier:	Naturprodukte Lembcke GbR
Batch:	300023
Expiry:	30 Sept 2018

*Royal jelly was analysed for the presence of e.g. GMOs, pesticides and bee treatment agents and antibiotics etc. by Intertek Food Services GmbH Bremen und QSI, Germany. The diet was considered to be of acceptable quality since no analytes were measured at concentrations considered to be toxic or detrimental to the test organisms. The results of these analyses are presented on the following pages.*

### 2 Glucose

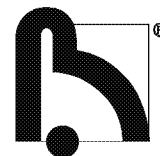
Details:	D-Glucose; "biotechnology grade"
Supplier:	VWR
Batch:	0257C197
Expiry:	28 Feb 2019

### 3 Fructose

Details:	D-Fructose; "high purity"
Supplier:	VWR
Batch:	0957C104
Expiry:	09 Oct 2018

### 4 Yeast Extract Powder

Details:	CAS No. 8013-01-2
Supplier:	MP Biomedicals, LLC
Batch:	Q6963
Reassay Date:	23 May 2019



## Appendix 2 (continued): Specifications of used material



Heinz Lembecke,  
 Christoph Lembecke  
 Schwabendorf 22  
 17139 Faulenrost  
 Tel: +49 (0)39951/17008  
 Fax: +49 (0)381/49532640  
 Email: info@naturprodukte-mv.de

## Analysenzertifikat

### Allgemeine Angaben:

Probe:	Gelée Royale frisch
Los/Charge:	300023
Analysedatum:	04.09. - 13.09.2017
Artikelnr.:	1380; 1390; 1391; 1393; 1395
Labor:	Intertek Food Services GmbH Bremen und QSI

### VA60060 - Detection of GMO: Triple-Screening (p-35S\*, t-NOS\*, p-FMV\*\*), PCR, Food

Parameter	Result
Specific reactions:	
NOS-Terminator	negativ/negative
35S-Promotor	negativ/negative
FMV-Promotor	negativ/negative
Comments (Template 1/398)	2
-	4
-	6
Remark	

(LOD) of this method is about <= 5 copies GM plant DNA per reaction in the sediment of 2x50g honey.

Nearly all of the world-wide officially registered GMO are covered by this method. \*ASU LD6-08-112 \*\*LD6-08-145

n.d. = not detectable

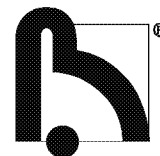
### Conclusion:

Within the above tested range no genetically modified DNA sequences were detected resp. the amount is below the LOD. Therefore the sample is not subject to the admission and declaration requirements of Regulations (EC) 1829/2003 and 1830/2003

This examination is the basis for special decision guidance.

Quality Services International GmbH

Version 0



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Determination of the acidity of royal jelly (in mL 0.1N NaOH/g) (108233)

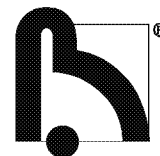
Parameter	Result	Unit	Method
Acidity (mL 0.1N NaOH/g)	3.50	mL	PM DEB1_042 (a) <sup>1</sup>
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### **Interpretation:**

Referring to the above mentioned parameters the analysed sample indicates the expected properties for royal jelly and therefore corresponds to the general trade agreement (Sabatini et al.: Quality and standardization of Royal Jelly, Journal of ApiProduct and ApiMedical Science 1(1): 16-21, 2009).

T. J.

Tina Huth  
Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

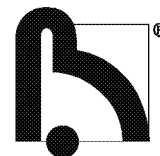
### ANALYSIS REQUESTED: Commercial Analysis of Royal Jelly (108201)

Parameter	Result	Method
Appearance	yellowish, cloudy, jelly-like substance, with small crystalline particles	PM DE01_108 (a) <sup>1</sup>
Odour	sour, hot, typ. for royal jelly	PM DE01_108 (a) <sup>1</sup>
Taste	sour, hot, adstringent, typical for royal jelly	PM DE01_108 (a) <sup>1</sup>
Water and volatile substances <sup>a</sup>	65.1 g/100 g	Gravimetry (a) <sup>2</sup>
Ash	1.0 g/100 g	Gravimetry (a) <sup>2</sup>
pH	4.1	PM DE01_042 (a) <sup>3</sup>
Protein (N x 6,25)	14.0 g/100 g	Kjeldahl (a)
Lipids	3.0 g/100 g	Soxhlet (a) <sup>4</sup>
Glucose	5.5 g/100 g	DIN 10758 (a) <sup>5</sup>
Fructose	5.5 g/100 g	DIN 10758 (a) <sup>5</sup>
Sucrose	1.9 g/100 g	DIN 10758 (a) <sup>5</sup>
Maltose	n.d. g/100 g	DIN 10758 (a) <sup>5</sup>
Erlöse	n.d. g/100 g	DIN 10758 (a) <sup>5</sup>
Melezitose	n.d. g/100 g	DIN 10758 (a) <sup>5</sup>
n.d. - not detected < 0.1 g/100g (lipids), n.d. - not detected < 0.5 g/100g (sugars) <sup>a</sup> 2 h at 105°C		
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) DIN 10964 (2) Inhouse procedure (3) Inhouse procedure (4) J. Agric. Food Chem. 2002, 50, 2227-2230, mod. (MTSE) (5) ASU § 64 LFGB L 40.00-7 This document may only be reproduced in full. The results given herein apply to the submitted sample only.		

#### Interpretation:

Referring to the above mentioned parameters the analysed sample indicates the expected properties for royal jelly according to relevant literature and therefore corresponds to the general trade agreement (Steckbrief Gelée royale, Dr. Werner von der Ohe, LAYES Institut für Bienenkunde, Celle, 2006)

continued on the next page...

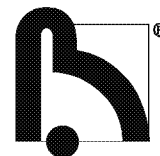


## Appendix 2 (continued): Specifications of used material

as well as Sabatini et al.: Quality and standardisation of royal jelly, *Journal of ApiProduct and ApiMedical Science* 1(1): 16-21, 2009).

A handwritten signature in black ink, appearing to read 'T. Huth'.

Tina Huth  
*Responsible Scientist, Certified Food Chemist*



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Pesticides and Bee Treatment Agents by GC-MS/MS and LC-MS/MS (108107)

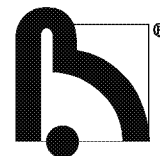
Parameter	Result	Unit	Method
Amitraz (incl. Metabolites)	0.017	mg/kg	(a) <sup>1</sup>
other Pesticides	n.d.	mg/kg	(a) <sup>1</sup>
n.d. = not detected < limits of quantification List of analytes and limits of quantification: see pdf-file attached to the electronically submitted analysis report (a) : accredited under terms of DIN EN ISO/IEC 17025 (na) : not accredited method (1) ASU § 64 LFGB L 00.00-115 (DIN EN 15662) This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameters, the mentioned limits of quantification and considering an expanded measurement uncertainty of 50 % (SANTE/11345/2015), the sample corresponds to the EU-Regulation 396/2005 as well as Regulation (EC) 470/2009 in conjunction with Regulation (EU) 37/2010.

Dr. Katharina Schmidt  
 Responsible Scientist, Certified Food Chemist





## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Fluoroquinolones-2 by LC-MS/MS (108045)

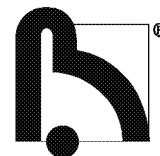
Parameter	Result	Unit	Method
Cinoxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Ciprofloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Danofloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Diffloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Enoxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Enrofloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Fleroxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Flumequin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Norfloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Ofloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Oxolinic Acid	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Sarafloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Sparfloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Marbofloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Nalidixic Acid	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Lomefloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>
Orbifloxacin	n.d.	µg/kg	PM DE01_086 (a) <sup>1</sup>

n.d. - not detected < limit of quantification 5 µg/kg; n.a. - not analyzable  
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure  
This document may only be reproduced in full. The results given herein apply to the submitted sample only.

#### Interpretation:

Regarding the examined parameters and the mentioned limit of quantification the sample corresponds to the legal regulations (Regulation (EC) 470/2009 in conjunction with regulation (EU) 37/2010 (dated Feb. 9th 2010)).

Caterina Hünninger  
Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Macrolides-2 by LC-MS/MS (108031)

Parameter	Result	Unit	Method
Tylosin A	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Sum Erythromycin A	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Clindamycin	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Josamycin	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Leucomycin (Kitasamycin)	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Lincomycin	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Spiramycin	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Tilmicosin	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
Oleandomycin	n.d.	µg/kg	PM DE01_082 (a) <sup>1</sup>
n.d. - not detected < limit of quantification of 5 µg/kg			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

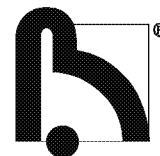
#### Interpretation:

Regarding the examined parameters and the mentioned limit of quantification the sample corresponds to the legal regulations (Regulation (EC) 470/2009 in conjunction with regulation (EU) 37/2010 (dated Feb. 9th 2010)).

The result for tylosin A includes the identified metabolite tylosin B.

The result for sum erythromycin A includes the identified metabolite anhydroerythromycin A.

Caterina Hünninger  
 Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

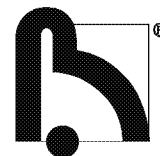
### ANALYSIS REQUESTED: Nitroimidazoles by LC-MS/MS (108027)

Parameter	Result	Unit	Method
Metronidazole	n.d.	µg/kg	PM DE01_136 (a) <sup>1</sup>
Ronidazole	n.d.	µg/kg	PM DE01_136 (a) <sup>1</sup>
Dimetridazole	n.d.	µg/kg	PM DE01_136 (a) <sup>1</sup>
n.d. = not detected < 0.5 µg/kg limit of quantification			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameters and with respect to the mentioned limit of quantification the sample corresponds to the legal regulations (Regulation (EC) 470/2009 in conjunction with regulation (EU) 37/2010 (dated Feb. 9th 2010)).

Caterina Hänniger  
 Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Nitrofurane Metabolites by LC-MS/MS (108019)

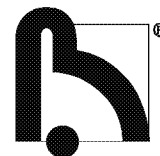
Parameter	Result	Unit	Method
AOZ	n.d.	µg/kg	PM DE01_031 (a) <sup>1</sup>
AMOZ	n.d.	µg/kg	PM DE01_031 (a) <sup>1</sup>
AHD	n.d.	µg/kg	PM DE01_031 (a) <sup>1</sup>
SEM	n.d.	µg/kg	PM DE01_031 (a) <sup>1</sup>
n.d. - not detected < 0.5 µg/kg (limit of quantification) MRPL (Minimum Required Performance limit) for nitrofurane metabolites = 1.0 µg/kg according to 2003/181/EG dated March 13, 2003			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameters and the mentioned minimum required performance limit (MRPL) the sample corresponds to the legal regulations (Regulation (EC) 470/2009 in conjunction with Regulation (EU) 37/2010 (dated Feb. 9th 2010)) and corresponds to the Decision 2003/181/EC dated March 13th, 2003 in connection with the Decision 2005/34/EC dated Jan. 11th, 2005.

*T. Peix*

Dr. Torsten Peix  
Responsible Scientist, Chemist



## Appendix 2 (continued): Specifications of used material

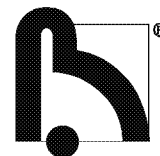
### ANALYSIS REQUESTED: Chloramphenicol by LC-MS/MS (108016)

Parameter	Result	Unit	Method
Chloramphenicol	n.d.	µg/kg	PM DE01_022 (a) <sup>1</sup>
n.d. = not detected < limit of quantification 0.1 µg/kg MRPL (Minimum Required Performance limit) for chloramphenicol = 0.3 µg/kg according to 2003/181/EG dated March 13, 2003			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameter and with respect to the mentioned limit of quantification and the MRPL of 0.3 µg/kg the sample corresponds to the legal regulations (Regulation (EC) 470/2009 in conjunction with Regulation (EU) 37/2010 (dated Feb. 9th 2010)) and corresponds to the Decision 2003/181/EC dated March 13th, 2003 in connection with the Decision 2005/34/EC dated Jan. 11th, 2005.

Caterina Hünninger  
 Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: 10-Hydroxy-2-decenoic acid by Liquid Chromatography (108012)

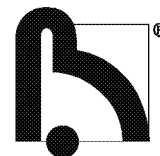
Parameter	Result	Unit	Method
10-Hydroxy-2-decenoic acid	1.58	% (g/100g)	PM DEB1_058 (a) <sup>1</sup>
Expected 10-HDA content in Royal Jelly (fresh): 1-6 % with a water content of 60-70 % <sup>2</sup> n.d. not detected < Limit of quantification 0.01%			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

The analysed Royal Jelly indicates the expected concentration of 10-HDA according to relevant literature ("Steckbrief Gelée royale, Dr. Werner von der Ohe, Niedersächsisches Landesinstitut für Bienenkunde, Celle 2006, Germany as well as Sabatini et al.: Quality and standardisation of royal jelly, Journal of ApiProduct and ApiMedical Science 1(1): 16-21, 2009).  
 Therefore the sample corresponds to the general trade agreement.

*M. Schubert*

Dr. Martin Schubert  
 Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

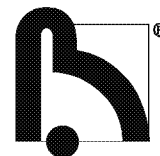
### ANALYSIS REQUESTED: Tetracyclines by LC-MS/MS (108003)

Parameter	Result	Unit	Method
Oxytetracycline	n.d.	µg/kg	PM DE01_087 (a) <sup>1</sup>
Tetracycline	n.d.	µg/kg	PM DE01_087 (a) <sup>1</sup>
Chlortetracycline	n.d.	µg/kg	PM DE01_087 (a) <sup>1</sup>
Doxycycline	n.d.	µg/kg	PM DE01_087 (a) <sup>1</sup>
Demectocycline	n.d.	µg/kg	PM DE01_087 (a) <sup>1</sup>
n.d. - not detected < limit of quantification 10 µg/kg; n.a. - not analyzable			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameters and the mentioned limit of quantification the sample corresponds to the legal regulations (regulation (EC) 470/2009 in conjunction with regulation (EU) 37/2010 (dated Feb. 9th 2010)). The results are stated as sum of the parent drug and the corresponding 4-Epimer.

Martin Linkogel  
Head of Laboratory, Certified Food Chemist



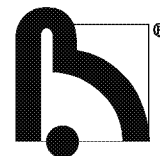
## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Sulfonamides and Trimethoprim by LC-MS/MS (108002)

Parameter	Result	Unit	Method
Sulfaguanidine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfanilamide	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfacetamide	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfadiazine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfathiazole	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfapyridine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamerazine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamethazine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamer	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamethoxypyridazine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfachloropyridazine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamonomethoxine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfisoxazole	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamethoxazole	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfadoxine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfaquinoxaline	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfadimethoxine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfabenzamide	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamoxole	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfaclozine	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfamethizole	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Sulfisozole	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
Trimethoprim	n.d.	µg/kg	PM DE01_083 (a) <sup>1</sup>
n.d. - not detected < limit of quantification 10 µg/kg; n.a. - not analyzed			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure			
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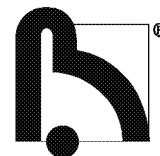
## Appendix 2 (continued): Specifications of used material

### Interpretation:

Regarding the examined parameters and the mentioned limit of quantification the sample corresponds to the legal regulations (regulation (EC) 470/2009 in conjunction with regulation (EU) 37/2010 (dated Feb. 9th 2010)).

A handwritten signature in black ink, appearing to read 'M. Linkogel'.

Martin Linkogel  
Head of Laboratory, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

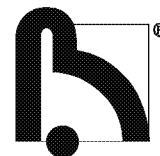
### ANALYSIS REQUESTED: Streptomycin by LC-MS/MS (108001)

Parameter	Result	Unit	Method
Streptomycin	n.d.	µg/kg	PM DE01_126 (a) <sup>1</sup>
Dihydrostreptomycin	n.d.	µg/kg	PM DE01_126 (a) <sup>1</sup>
n.d. - not detected < 10 µg/kg limit of quantification			
(a) : accredited under terms of DIN EN ISO1EC 17025. (na) : not accredited method. (1) Inhouse procedure This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameters and the mentioned limit of quantification the sample corresponds to the legal regulations (regulation (EC) 470/2009 in conjunction with regulation (EU) 37/2010 (dated Feb. 9th 2010)).

Hauke Zinow  
Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Heavy Metals and Minerals by ICP-MS (101491)

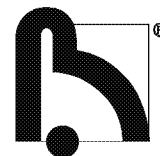
Parameter	Result	Unit	Method
Arsenic (As)	n.d.	mg/kg	PM DE01_018 (a) <sup>1</sup>
Lead(Pb)	n.d.	mg/kg	PM DE01_018 (a) <sup>1</sup>
Cadmium (Cd)	n.d.	mg/kg	PM DE01_018 (a) <sup>1</sup>
Mercury (Hg)	n.d.	mg/kg	PM DE01_018 (a) <sup>1</sup>
n.d. - not detectable < limit of quantification (LOQ) LOQ: Pb, Cd, Hg, As, Se, Sn, Cr, Ni, Co, Mn, Cu, Sb: 0.01 mg/kg; Zn, Fe, Ba, Mg: 0.10 mg/kg; Al, Ca, K, Na, P: 1 mg/kg; I: 0.2 mg/kg; Organic arsenic is calculated.			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) EN 15763 mod.; DIN EN ISO 17294-2 mod.			
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#### Interpretation:

The found contents lie within the range of the naturally occurring range for this kind of foodstuff (ref.: Swiss Food Compendium, Chapter 23A, EDMZ, 1995; Stefan Bogdanov, Contaminants of bee products, Apidologie 37 (2006); MAFF UK - Analysis of bee products for heavy metals, MAFF Food Surveillance Information Sheet no. 53, Feb 1995, Sheet no. 85, Dec. 2005; Roman et al.: Comparative study of selected toxic elements in propolis and honey, Journal of Apicultural Science, Vol. 55 No. 2, 2011). Regarding the examined parameters the sample meets the requirements of Commission Regulation (EC) No. 1881/2006 for food supplements (limit values: Pb: 3 mg/kg, Cd: 1 mg/kg, Hg: 0.1 mg/kg).

*TJ*

Tina Huth  
Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Microbiology for non-sterile products (Ph. Eur. 7th edition) (500014)

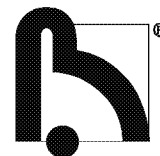
Parameter	Result	Unit	Method
E. coli	n. d.	in 1 g	Ph.Eur 7.0/2.6.13 (a) <sup>1</sup>
Bile-tolerant, gram-negative bacteria	n. d.	cfu/g	Ph.Eur 7.0/2.6.13 (a) <sup>1</sup>
Salmonella in 25g	n. d.	in 25 g	Ph.Eur 7.0/2.6.13 (a) <sup>1</sup>
Staphylococcus aureus	n. d.	in 1 g	Ph.Eur 7.0/2.6.13 (a) <sup>1</sup>
TAMC	n. d.	cfu/g	Ph.Eur 7.0/2.6.12 (a) <sup>2</sup>
TYMC	n. d.	cfu/g	Ph.Eur 7.0/2.6.12 (a) <sup>2</sup>
n.d. = not detected (TAMC, TYMC: <10 cfu/g) cfu = colony forming units TAMC = total aerobic microbial count TYMC = total combined yeasts/mould count			
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) non-GMP (2) non-GMP This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

#### Interpretation:

Regarding the examined parameters and the mentioned limits of detection the submitted sample corresponds to the microbiological requirements of the European pharmacopoeia, 7th Edition, provision for oral dosage forms containing raw materials of natural (animal, vegetal or mineral) origin for which anti microbial pretreatment is not feasible and for which the competent authority accepts TAMC of the raw material exceeding 1000 cfu per gram or per millilitre.

*S. Kuhnert*

Dr. Sybille Kuhnert  
Responsible Scientist, Biologist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: $^{13}\text{C}$ Isotope Analysis of royal jelly (108503)

Parameter	Result	Unit	Method
Isolated Protein	-22.6	$\delta^{13}\text{C}(\text{‰})$	AOAC 996.12 mod. (na) <sup>1</sup>
Sample	-22.2	$\delta^{13}\text{C}(\text{‰})$	AOAC 996.12 mod. (na) <sup>1</sup>

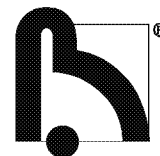
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method. (1) Inhouse procedure  
This document may only be reproduced in full. The results given herein apply to the submitted sample only.

#### Interpretation:

Regarding the isotopic values the sample corresponds to the specifications of royal jelly type I according to ISO 12824.

*M. Schubert*

Dr. Martin Schubert  
Responsible Scientist, Certified Food Chemist



## Appendix 2 (continued): Specifications of used material

### ANALYSIS REQUESTED: Polycyclic Aromatic Hydrocarbons (PAHs) (108805)

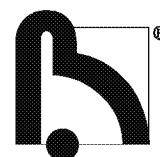
Parameter	Result	Unit	Method
5-Methylchrysene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(a)anthracene*	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(a)pyrene*	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(b)fluoranthene*	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(c)fluorene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(ghi)perylene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(j)fluoranthene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Benzo(k)fluoranthene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Chrysene*	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Triphenylene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Cyclopenta(c,d)pyrene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Dibenzo(a,h)anthracene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Dibenzo(a,e)pyrene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Dibenzo(a,h)pyrene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Dibenzo(a,i)pyrene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Dibenzo(a,l)pyrene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
Indeno(1,2,3,c,d)pyrene	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>
*Sum PAH4	n.d.	µg/kg	PM DE01_128 (a) <sup>1</sup>

n.d. - not detected < limit of quantification 0.5 µg/kg  
(a) : accredited under terms of DIN EN ISO/IEC 17025. (na) : not accredited method.  
(1) Inhouse procedure, GPC cleanup, GC-MS  
This document may only be reproduced in full. The results given herein apply to the submitted sample only.

#### Interpretation:

Regarding the examined parameter and the mentioned limit of quantification the sample corresponds to the legal regulations (EU regulation (EC) 1881/2006 dated Sept. 1st 2012).

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### Appendix 3: Cumulative mortality, behavioural abnormalities and adult emergence

	D4 D5 D6 D7				On D8						On D15			Between D8 and D15			On D22*				
Treatment	Cumulative mortality				Cumulative mortality			Other observations			Cumulative mortality			Pupal mortality			Cumulative mortality			Hatch	
Replicate	No	No	No	No	No	M [%]	CM [%]	No OO	OO [%]	O	No	M [%]	CM [%]	No	M [%]	CM [%]	No	M [%]	CM [%]	H [%]	W [g]
AC	1	0	0	1	1	1	8.3		0	0.0	-	4	33.3	3	27.3		4	33.3		66.7	0.094
	2	0	0	0	0	1	8.3		0	0.0	-	2	16.7	1	9.1		2	16.7		83.3	0.095
	3	0	0	0	0	0	0.0		0	0.0	-	2	16.7	2	16.7		2	16.7		83.3	0.094
	avg						5.6			0.0		22.2			17.7			22.2		77.8	0.094
BC	1	0	1	1	1	1	8.3		0	0.0	-	2	16.7	1	9.1		3	25.0		75.0	0.099
	2	0	0	0	0	0	0.0		0	0.0	-	3	25.0	3	25.0		3	25.0		75.0	0.095
	3	0	0	0	0	0	0.0		0	0.0	-	1	8.3	1	8.3		1	8.3		91.7	0.094
	avg						2.8			0.0		16.7			14.1			19.4		80.6	0.096
AT	1	0	0	0	1	2	16.7		0	0.0	-	6	50.0	4	40.0		8	66.7		33.3	0.092
	2	0	0	0	0	0	0.0		0	0.0	-	2	16.7	2	16.7		6	50.0		50.0	0.081
	3	0	0	1	1	2	16.7		0	0.0	-	7	58.3	5	50.0		7	58.3		41.7	0.083
	avg						11.1	8.6		0.0		41.7	30.0		35.6	24.9		58.3	48.3	41.7	0.085
BT	1	0	0	0	1	4	33.3		0	0.0	-	5	41.7	1	12.5		5	41.7		58.3	0.087
	2	0	0	0	0	0	0.0		1	8.3	F	4	33.3	4	33.3		4	33.3		66.7	0.087
	3	0	0	1	2	2	16.7		0	0.0	-	4	33.3	2	20.0		5	41.7		58.3	0.090
	avg						16.7	14.3		2.8		36.1	23.3		21.9	9.1		38.9	24.1	61.1	0.088
CT	1	0	0	0	0	1	8.3		1	9.1	F	4	33.3	3	27.3		4	33.3		66.7	0.093
	2	0	0	0	0	2	16.7		0	0.0	-	3	25.0	1	10.0		3	25.0		75.0	0.094
	3	0	0	0	0	2	16.7		0	0.0	-	3	25.0	1	10.0		3	25.0		75.0	0.089
	avg						13.9	11.4		3.0		27.8	13.3		15.8	1.9		27.8	10.3	72.2	0.092
DT	1	0	0	0	0	1	8.3		1	9.1	F	4	33.3	3	27.3		4	33.3		66.7	0.098
	2	0	0	1	1	2	16.7		0	0.0	-	2	16.7	0	0.0		2	16.7		83.3	0.095
	3	0	0	0	0	2	16.7		0	0.0	-	2	16.7	0	0.0		2	16.7		83.3	0.097
	avg						13.9	11.4		3.0		22.2	6.7		9.1	0.0		22.2	3.4	77.8	0.097
ET	1	0	0	0	1	2	16.7		0	0.0	-	3	25.0	1	10.0		3	25.0		75.0	0.091
	2	0	0	0	0	2	16.7		0	0.0	-	2	16.7	0	0.0		2	16.7		83.3	0.092
	3	0	0	0	0	1	8.3		0	0.0	-	2	16.7	1	9.1		2	16.7		83.3	0.087
	avg						13.9	11.4		0.0		19.4	3.3		6.4	0.0		19.4	0.0	80.6	0.090
AR	1	0	0	1	1	2	16.7		0	0.0	-	5	41.7	3	30.0		12	100.0		0.0	-
	2	0	0	0	1	6	50.0		2	33.3	F	10	83.3	4	66.7		12	100.0		0.0	-
	3	0	0	0	0	2	16.7		0	0.0	-	7	58.3	5	50.0		12	100.0		0.0	-
	avg						27.8	25.7		11.1		61.1	53.3		48.9	40.5		100.0	100.0	0.0	-

No: Number of dead larvae

M [%]: Cumulated mortality

CM [%]: Cumulated mortality corrected for solvent control BC, according to SCHNEIDER-ORELLI 1947

No OO: Number of larvae with other observations (OO)

OO [%]: Relative number of larvae with other observations

No H: Number of emerged bees

H [%]: Relative number of hatched bees = adult emergence [%]

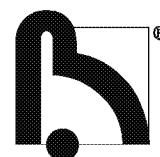
W [g]: Mean adult emergence body weight [g]

avg: Average mortality [%] / average weight [g] out of replicate means

Adult emergence [%] = 100 [%] – Mortality of D22 [%] (\* Due to showing only one decimal place, sum of mean cumulative mortality on D22 and mean adult emergence might be > 100 %.)

Pupal mortality was calculated as cumulative mortality between D8 and D15 according to SCHNEIDER-ORELLI 1947, based on survived larvae on D8.

Calculations were performed with non-rounded values; negative values were set to "0".



#### Appendix 4: Weight of emerged honey bees (*A. mellifera* L.)

	Treatment						
	Control AC	Solvent control BC	ET	DT	CT	BT	AT
$\mu\text{g a.i./larva}^1$	-	-	0.85	8.73	20.25	31.91	58.04
$\text{mg a.i./kg food}^1$	-	-	5.41	55.21	128.12	201.90	367.19
Weight of emerged bees [g]	Replicate 1	-	-	0.100	-	0.097	0.094
		0.103	0.096	0.088	-	0.089	-
		-	0.079	0.085	0.104	0.104	-
		0.085	0.100	0.076	0.099	0.086	-
		0.081	0.101	0.098	-	0.078	0.098
		-	0.104	0.095	-	0.086	0.092
		0.083	0.100	0.094	0.095	0.091	0.090
		0.091	-	0.086	0.093	0.088	-
		-	0.092	0.099	0.097	-	0.098
		0.106	0.106	-	-	-	-
	Replicate 2	0.101	-	0.100	0.092	0.102	0.079
		0.099	0.113	-	0.107	0.099	0.082
		Mean	0.094	0.099	0.091	0.098	0.093
		0.086	0.081	0.090	0.088	0.101	0.077
		-	-	0.085	-	0.092	-
		0.098	0.092	0.084	0.094	-	0.095
		0.109	0.108	0.092	0.096	0.096	-
		-	0.087	0.093	-	0.097	0.087
		0.078	0.093	-	0.091	0.094	0.073
		0.083	0.094	0.099	0.093	0.087	0.087
	Replicate 3	0.100	-	0.094	0.099	0.091	0.093
		0.082	0.103	0.087	0.095	0.093	0.078
		0.109	0.098	0.089	0.098	-	0.104
		0.100	0.100	0.107	0.107	-	-
		0.108	-	-	0.086	0.093	-
		Mean	0.095	0.095	0.092	0.095	0.094
		0.098	-	0.081	0.099	0.086	0.090
		0.087	0.088	0.082	0.098	0.100	0.070
		0.110	0.094	0.088	0.087	0.087	-
		0.093	0.094	0.093	-	0.088	-
	Replicate 4	0.076	0.091	0.090	0.102	-	0.097
		0.086	0.098	-	0.098	0.083	-
		0.102	0.073	0.061	0.084	0.083	0.10
		0.088	0.101	-	-	0.088	-
		0.093	0.102	0.076	0.094	-	0.088
		0.111	0.104	0.081	0.093	0.091	0.090
		-	0.091	0.118	0.109	0.092	0.094
		-	0.100	0.101	0.107	-	-
		Mean	0.094	0.094	0.087	0.097	0.089
		0.095	0.096	0.090	0.097	0.092	0.088
Mean:	0.095	0.096	0.090	0.097	0.092	0.088	0.085
Std. Dev.:	0.0107	0.0088	0.0107	0.0065	0.0059	0.0092	0.0071
n:	28	29	29	28	26	22	15
CV:	11.3	9.2	11.8	6.7	6.4	10.5	8.4

<sup>1</sup> Doses/concentrations are based on the analysed values.

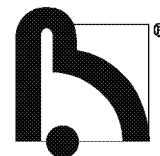
Mean: Arithmetic mean over all individuals of each treatment

Std. Dev.: Standard deviation

n: Number of individuals

CV: Coefficient of variation





## Appendix 5: Statistical analysis – Determination of NOEC and NOED (D8)

At first a trend analysis by contrasts using proportions and a Tarone's test to test for extra-binomial variance were performed.

The analysis of contrasts did not reveal a linear trend. In treatments, no extra-binomial variance was found. Thus, the Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm was performed.

### Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm

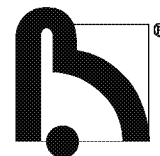
Two-sample comparisons between treatment and control on the multiple significance level (Alpha is 0.050; one-sided greater). Two-sample comparisons are performed sequentially using the adjusted Alpha\* (=  $\alpha/(k-1)$ ; k: number of comparisons (after Holm, 1979);  $H_0$  (no effect) is accepted, if the probability  $p > \text{Alpha}^*$ ; p(exact) is the probability that the increase in category "Dead" observed in the treatments is due to chance. Note that the step-down test terminates after the first non-significant treatment is encountered.

TI: Total Introduced; Sig: Significance; +: significant; -: non-significant;

### Threshold dose [ $\mu\text{g a.i./larva}$ ] and concentration [ $\text{mg a.i./kg food}$ ] for mortality on D8

Treatment		TI	Survived	Not survived	% Not survived	p	Alpha*	Sig
[ $\mu\text{g a.i./larva}$ ]	[ $\text{mg a.i./kg food}$ ]							
Solvent control	Solvent control	36	35	1	2.8			
0.85	5.41	36	31	5	13.9	0.099	0.025	-
8.73	55.21	36	31	5	13.9	0.099	0.017	-
20.25	128.12	36	31	5	13.9	0.099	0.013	-
31.91	201.90	36	30	6	16.7	0.053	0.010	-
58.04	367.19	36	32	4	11.1	0.179	0.050	-

The NOED appears to be higher than or equal 58.04  $\mu\text{g a.i./larva}$  and the NOEC appears to be higher than or equal 367.19  $\text{mg a.i./kg food}$ .



## Appendix 6: Statistical analysis – Determination of NOEC and NOED (D15)

At first a trend analysis by contrasts using proportions and a Tarone's test to test for extra-binomial variance were performed.

The analysis of contrasts did not reveal a linear trend. In treatments, no extra-binomial variance was found. Thus, the Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm was performed.

### Multiple Sequentially-rejective Fisher Test after Bonferroni-Holm

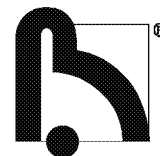
Two-sample comparisons between treatment and control on the multiple significance level (Alpha is 0.050; one-sided greater). Two-sample comparisons are performed sequentially using the adjusted Alpha\* (=  $\alpha/(k-1)$ ; k: number of comparisons (after Holm, 1979);  $H_0$  (no effect) is accepted, if the probability  $p > \text{Alpha}^*$ ; p(exact) is the probability that the increase in category "Dead" observed in the treatments is due to chance. Note that the step-down test terminates after the first non-significant treatment is encountered.

TI: Total Introduced; Sig: Significance; +: significant; -: non-significant;

### Threshold dose [ $\mu\text{g a.i./larva}$ ] and concentration [ $\text{mg a.i./kg food}$ ] for mortality between D8-D15

Treatment		TI	Survived	Not survived	% Not survived	p	Alpha*	Sig
[ $\mu\text{g a.i./larva}$ ]	[ $\text{mg a.i./kg food}$ ]							
Solvent control	Solvent control	35	30	5	14.3			
0.85	5.41	31	29	2	6.5	0.927	0.050	-
8.73	55.21	31	28	3	9.7	0.828	0.025	-
20.25	128.12	31	26	5	16.1	0.552	0.017	-
31.91	201.90	30	23	7	23.3	0.268	0.013	-
58.04	367.19	32	21	11	34.4	0.050	0.010	-

The NOED appears to be higher than or equal 58.04  $\mu\text{g a.i./larva}$  and the NOEC appears to be higher than or equal 367.19  $\text{mg a.i./kg food}$ .



## Appendix 7: Statistical analysis – Determination of NOEC and NOED (D22)

At first a trend analysis by contrasts using proportions and a Tarone's test to check for extra-binomial variance was performed.

The analysis of contrasts reveal a linear trend. In treatments, no extra-binomial variance was found. Thus, the Step-down Cochran-Armitage Test Procedure was performed.

### Step-down Cochran-Armitage Test Procedure

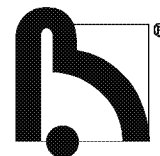
Step-down test to detect an increasing trend in responses (Alpha is 0.050; one-sided greater);  $\chi^2(\text{tot})$ : total (Pearson)  $\chi^2$ ;  $z(\text{trend})$ : standardised one-sided deviation due to the linear upward trend;  $\chi^2(\text{err})$ : unexplained component of  $\chi^2(\text{tot})$ ;  $p(\text{tot}|\text{trend}|\text{err})$ : probabilities that the observed results could be due to chance;  $H_0$  (no trend) is accepted, if  $p(\text{trend}) > \text{Alpha}$ . The step-down test terminates after the first non-significant treatment is encountered

TI: Total Introduced; Sig: Significance; +: significant; -: non-significant;

### Threshold dose [ $\mu\text{g a.i./larva}$ ] and concentration [ $\text{mg a.i./kg food}$ ] for adult emergence on D22

Treatment		TI	Not emerged	% Not emerged	$\chi^2(\text{tot})$	$p(\text{tot})$	$\chi^2(\text{err})$	$p(\text{err})$	$ z (\text{trend})$	$p(\text{trend})$	Sig
$[\mu\text{g a.i./larva}]$	$[\text{mg a.i./kg food}]$										
Solvent control	Solvent control	36	7	19.4							
0.85	5.41	36	7	19.4	0.000	1.000	0.000	<0.001	0.000	1.000	-
8.73	55.21	36	8	22.2	0.114	0.945	0.029	0.866	0.293	0.385	-
20.25	128.12	36	10	27.8	0.964	0.810	0.161	0.923	0.896	0.185	-
31.91	201.90	36	14	38.9	5.081	0.279	0.861	0.835	2.054	0.020	+
58.04	367.19	36	21	58.3	19.581	0.002	3.541	0.472	4.005	<0.001	+

A NOED of 20.25  $\mu\text{g a.i./larva}$  and a NOEC of 128.12  $\text{mg a.i./kg food}$  is suggested by the program.



## Appendix 8: Statistical Analysis – Determination of ED<sub>50/20/10</sub>/EC<sub>50/20/10</sub> (D22)

### Weibull analysis using maximum likelihood regression for determination of ED<sub>50/20/10</sub>

Determination of the dose/response function; data is shown which entered the Weibull analysis; Log(x): common logarithm of the dose; n: number of organisms; Emp. Weibit: empirical "weibit"; Reg. "weibit": calculated "weibit" for the final function.

The treatment response was corrected by the control response (=19.4%) using Abbot's formula.

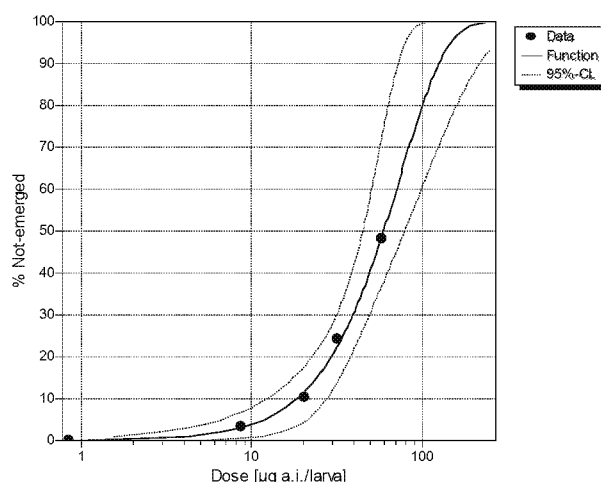
Treatm. [ $\mu\text{g}$ a.i./larva]	Log(x)	% Not emerged	n	Emp. Weibit	Weight	Reg. Weibit
Solvent control		0.0	36			excluded
0.85	-0.071	0.0	36	-13.591	0.027	-7.198
8.73	0.941	3.4	36	-12.654	1.125	-3.450
20.25	1.306	10.3	36	-10.779	4.161	-2.096
31.91	1.504	24.1	36	-0.7030	8.078	-1.364
58.04	1.764	48.3	36	-0.0469	16.930	-0.401

excluded: value not in line with the chosen function

Inhibitions lower equal 0 or greater equal 100.0% were replaced by 0.100 and 99.9, respectively.

### Parameters of the Weibull analysis: Results of the regression analysis

Parameter	Value
Computation runs:	7
Slope b:	3.70576
Intercept a:	-6.93696
Variance of b:	0.68933
Goodness of Fit	
Chi <sup>2</sup> :	0.14770
Degrees of freedom:	3
p(Chi <sup>2</sup> ):	0.986
Log ED <sub>50</sub> :	1.77304
SE Log ED <sub>50</sub> :	0.07826
g-Criterion:	0.19283
F:	404.626
p(F) (df: 1;3):	<0.001



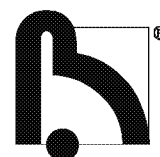
**Fig. A1:** Dose-effect curve showing the influence of the test item on emergence of the introduced Honeybee larvae as observed after 22 d. Slope function after Litchfield and Wilcoxon: 1.861

Chi<sup>2</sup> is a goodness of fit measure. If the probability, p(Chi<sup>2</sup>), is lower or equal than 0.100, data is much scattering round the computed dose/response function. In this case and with quantal data, confidence limits are corrected for heterogeneity.

(The slope function is derived from the slope, b, of the linearised probit function and computes as  $S = 10^{(1/b)}$ ; please note that small values refer to a steep dose/response relation and large ones to a flat relation.)

**Results of the Weibull analysis:** Selected effective doses (ED<sub>x</sub>) of the test item and their 95%- confidence limits (by normal approximation).

Parameter	ED <sub>50</sub>	ED <sub>20</sub>	ED <sub>10</sub>
Value [ $\mu\text{g}$ a.i./larva]	59.30	29.32	18.39
lower 95%-ci	44.72	22.64	12.27
upper 95%-ci	78.63	37.97	27.56



## Appendix 8 (continued): Statistical Analysis – Determination of $ED_{50/20/10}/EC_{50/20/10}$ (D22)

### Weibull analysis using maximum likelihood regression for determination of $EC_{50/20/10}$

Determination of the concentration/response function; data is shown which entered the Weibull analysis; Log(x): common logarithm of the concentration; n: number of organisms; Emp. Weibit: empirical "weibit"; Reg. "weibit": calculated "weibit" for the final function.

The treatment response was corrected by the control response (=19.4%) using Abbot's formula.

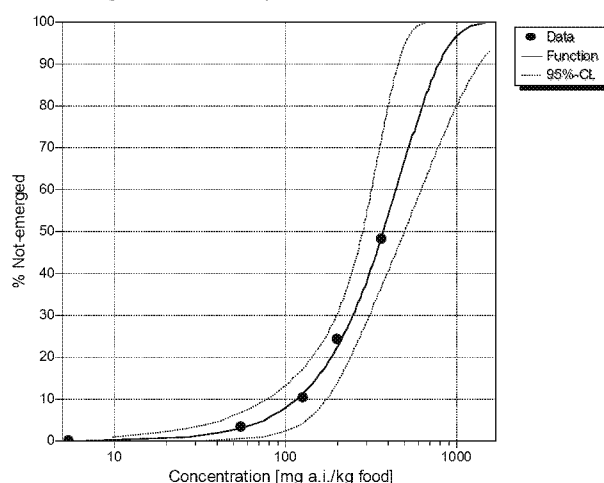
Treatm. [mg a.i./kg food]	Log(x)	% Not emerged	n	Emp. Weibit	Weight	Reg. Weibit
Solvent control		0.0	36			excluded
5.41	0.733	0.0	36	-1.3591	0.027	-7.189
55.21	1.742	3.4	36	-1.2654	1.124	-3.450
128.12	2.108	10.3	36	-1.0779	4.161	-2.096
201.90	2.305	24.1	36	-0.7030	8.079	-1.364
367.19	2.565	48.3	36	-0.0469	16.929	-0.401

excluded: value not in line with the chosen function

Inhibitions lower equal 0 or greater equal 100.0% were replaced by 0.100 and 99.9, respectively.

### Parameters of the Weibull analysis: Results of the regression analysis

Parameter	Value
Computation runs:	7
Slope b:	3.70597
Intercept a:	-9.90642
Variance of b:	0.68921
Goodness of Fit	
Chi <sup>2</sup> :	0.14755
Degrees of freedom:	3
p(Chi <sup>2</sup> ):	0.986
Log EC <sub>50</sub> :	2.57420
SE Log EC <sub>50</sub> :	0.07825
g-Criterion:	0.19277
F:	405.155
p(F) (df: 1;3):	<0.001



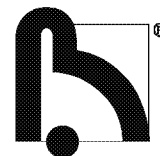
Chi<sup>2</sup> is a goodness of fit measure. If the probability, p(Chi<sup>2</sup>), is lower or equal than 0.100, data is much scattering round the computed concentration/response function. In this case and with quantal data, confidence limits are corrected for heterogeneity.

**Fig. A2:** Concentration-effect curve showing the influence of the test item on emergence of the introduced Honeybee larvae as observed after 22 d. Slope function after Litchfield and Wilcoxon 1.861

(The slope function is derived from the slope, b, of the linearized probit function and computes as  $S = 10^{(1/b)}$ ; please note that small values refer to a steep concentration/response relation and large ones to a flat relation.)

### Results of the Weibull analysis: Selected effective doses (ECx) of the test item and their 95%- confidence limits (by normal approximation).

Parameter	EC <sub>50</sub>	EC <sub>20</sub>	EC <sub>10</sub>
Value [mg a.i./kg food]	375.15	185.51	116.38
lower 95%-cl	282.90	143.25	77.67
upper 95%-cl	497.47	240.23	174.38



## Appendix 9: Statistical Analysis – Emergence bee weight (D22)

### Determination of differences between untreated and solvent control

#### Shapiro-Wilk's Test on Normal Distribution:

Mean: arithmetic mean; n: sample size; p(ShapiroWilk's W): probability of the W statistic (i.e. that the observed deviations from the normal distribution are due to chance). In case p(ShapiroWilk's W) is greater than the chosen significance level, the normality hypothesis( $H_0$ ) is accepted.

Treatment	Mean	s	n
Solvent control BC	0.096	0.0088	29
Untreated control AC	0.095	0.0107	28

**Results:** Number of residuals = 41; Shapiro-Wilk's W = 0.969; p(W) = 0.322; p(W) is greater than the selected significance level of 0.010; thus treatment data do not significantly deviate from normal distribution.

Normality check was passed (Shapiro-Wilk's;  $p > 0.01$ ).

#### Levene's Test on Variance Homogeneity (with Residuals):

Source: source of variance; SS: sum of squares; df: degrees of freedom; MSS: mean sum of squares; F: test statistic; p: probability that the variance explained by the treatment is due to chance.

Source	SS	df	MSS	F	p(F)
Treatment	0.00009	1	0.00009	3.521	0.066
Residuals	0.00146	55	0.00003		
Total	0.0016	56			

**Results:** The Levene test indicates variance homogeneity ( $p > 0.010$ ). Variance homogeneity check was passed ( $p > 0.01$ ).

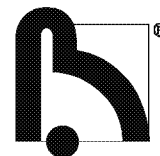
#### STUDENT-t test for Homogeneous Variances

Two-sample comparison of treatments with "Solvent control". Significance level was Alpha = 0.050, one-sided smaller; Mean: arithmetic mean; n: sample size; s: standard deviation; MDD: minimum detectable difference to Solvent control (in percent of Solvent control); t: sample t; p(t): probability of sample t for  $H_0$ :  $\mu_1 = \mu_2$ ; the differences are significant in case  $p(t) \leq \text{Alpha}$  (The residual variance of an ANOVA was applied;  $df = N - k$ ; N: sum of treatment replicates  $n(i)$ ; k: number of treatments).

+: significant; -: non-significant

Treatment	Mean	s	df	%MDD	t	p(t)	Sign.
Solvent control BC	0.096	0.0098					
Untreated control AC	0.095	0.0098	55	-4.5	-0.57	0.287	-

There is no statistically significant difference between solvent control and untreated control.



## Appendix 9 (continued): Statistical Analysis – Emergence bee weight (D22)

### Determination of differences solvent control and test item treatments

#### Shapiro-Wilk's Test on Normal Distribution:

Mean: arithmetic mean; n: sample size; p(ShapiroWilk's W): probability of the W statistic (i.e. that the observed deviations from the normal distributions are due to chance). In case p(ShapiroWilk's W) is greater than the chosen significance level, the normality hypothesis(Ho) is accepted.

Treatment		Mean	s	n
[µg a.i./larva]	[mg a.i./kg food]			
Solvent control BC	Solvent control BC	0.096	0.0088	29
0.85	5.41	0.090	0.0107	29
8.73	55.21	0.097	0.0065	28
20.25	128.12	0.092	0.0059	26
31.91	201.90	0.088	0.0092	22
58.04	367.19	0.085	0.0071	15

**Results:** Number of residuals = 86; Shapiro-Wilk's W = 0.992; p(W) = 0.905; p(W) is greater than the selected significance level of 0.010; thus treatment data do not significantly deviate from normal distribution. Normality check was passed (Shapiro-Wilk's; p > 0.01).

#### Levene's Test on Variance Homogeneity (with Residuals):

Source: source of variance; SS: sum of squares; df: degrees of freedom; MSS: mean sum of squares; F: test statistic; p: probability that the variance explained by the treatment is due to chance.

Source	SS	df	MSS	F	p(F)
Treatment	0.00021	5	0.00004	1.571	0.172
Residuals	0.00377	143	0.00003		
Total	0.0040	148			

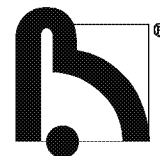
**Results:** The Levene test indicates variance homogeneity (p > 0.010). Variance homogeneity check was passed (p > 0.01).

#### Trend analysis by Contrasts (Monotonicity of Dose/Response)

Psi: sum of means weighted by contrasts; s(psi): standard error of psi; df: degrees of freedom; t: t-statistic; p(t): probability that the trend is due to chance (Ho: Slope = 0). Hypothesis of monotonicity is accepted if at least the linear contrast is significant.

Trend	Psi	s(psi)	df	t	p(t)
Linear	0.06758	0.01511	143	4.472	<0.001
Quadratic	0.02810	0.01615	143	1.740	0.042

**Results:** The linear trend is significant (p <= 0.05) The quadratic trend is significant (p <= 0.05) The analysis of contrasts revealed a linear trend, thus the selected Williams test was performed.



## Appendix 9 (continued): Statistical Analysis – Emergence bee weight (D22)

### Williams Multiple Sequential t-test Procedure

Comparison of treatments with "Solvent control" by the t test procedure after Williams with weight at 22.0 d: Significance was Alpha = 0,050, one-sided smaller; Mean: arithmetic mean; n: sample size; s: standard deviation; LhM: max. likelihood mean; MDD: minimum detectable difference to Solvent control (in percent of Solvent control); t: sample t; 't\*': critical t for  $H_0: \mu_1 = \mu_2 = \dots = \mu_k$ ; the differences are significant in case  $|t| > |t^*|$  (The residual variance of an ANOVA was applied;  $df = N - k$ ; N: sum of treatment replicates  $n(i)$ ; k: number of treatments). Note that the step-down test terminates after the first non-significant treatment is encountered.

+: significant; -: non-significant

Treatment		Mean	s	df	LhM	%MDD	t	t*	Sign.
[ $\mu\text{g a.i./larva}$ ]	[mg a.i./kg food]								
Solvent control BC	Solvent control BC	0.096	0.00829						
0.85	5.41	0.090	0.00829	143	0.093	-3.8	-1.23	-1.66	-
8.73	55.21	0.097	0.00829	143	0.093	-4.0	-1.22	-1.73	-
20.25	128.12	0.092	0.00829	143	0.092	-4.1	-1.86	-1.75	+
31.91	201.90	0.088	0.00829	143	0.088	-4.3	-3.46	-1.75	+
58.04	367.19	0.085	0.00829	143	0.085	-4.8	-4.26	-1.74	+

A NOED of 8.73  $\mu\text{g a.i./larva}$  and a NOEC of 55.21 mg a.i./kg food is suggested by the program.

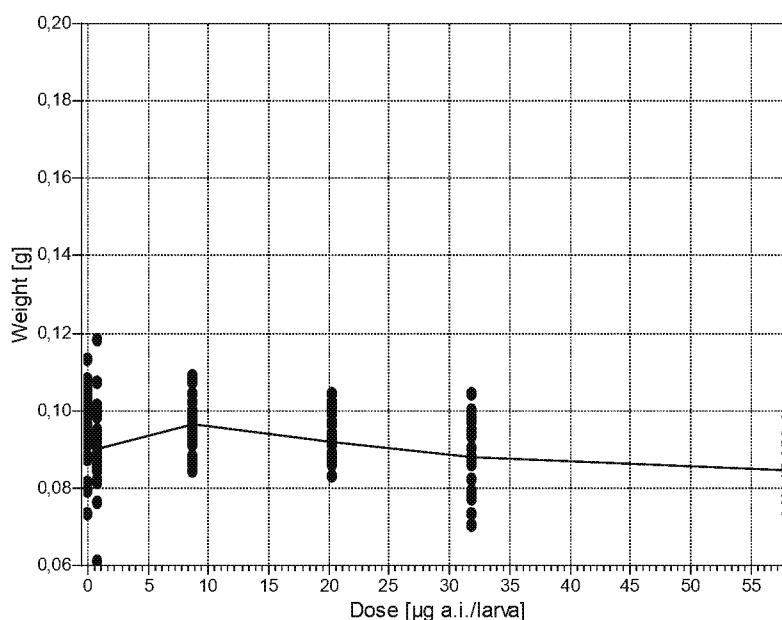
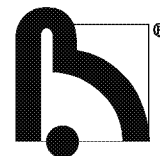


Fig. A3: Weight of *Apis mellifera* L. as observed under presence of the test item after 22 d.





## Appendix 10: Determination of doses/concentrations based on measured values

ID	Sampling day	Intended test rates <sup>1</sup>		Mean recovery of samples [% of nominal] <sup>2</sup>				Actual test rates	
		Nominal dose of a.i. [µg/larva]	Nominal concentration of a.i. [mg/kg food]	Fresh samples	Incubated samples	Mean recovery of fresh and incubated samples	Mean recovery per treatment	Average analysed concentration of a.i. [mg/kg food] <sup>3</sup>	Dose of a.i. [µg/larva] <sup>4</sup>
ET	D3	1.00	6.34	85	83	84	85	5.41	0.85
	D4			91	82	86			
	D5			92	82	87			
	D6			79	88	83			
DT	D3	10.02	63.38	88	85	86	87	55.21	8.73
	D4			91	87	89			
	D5			92	69	80			
	D6			99	87	93			
CT	D3	25.04	158.45	81	77	79	81	128.12	20.25
	D4			90	84	87			
	D5			88	83	86			
	D6			57	88	72			
BT	D3	50.09	316.90	55	66	60	64	201.90	31.91
	D4			66	72	69			
	D5			62	71	67			
	D6			48	69	59			
AT	D3	100.18	633.80	56	57	56	58	367.19	58.04
	D4			53	49	51			
	D5			60	60	60			
	D6			68	61	65			

Calculations were performed with non-rounded values.

Density final diets: 1.13 g/cm<sup>3</sup>

Total amount of food/larva: 140 µL (D3: 20 µL, D4: 30 µL, D5: 40 µL, D6: 50 µL)

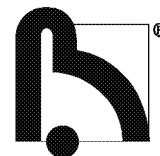
<sup>1</sup> According to study plan (Appendix 14)

<sup>2</sup> Some values include measurement of retain samples, see analytical phase report for details (Appendix 15).

<sup>3</sup> Values of actual concentrations were calculated based on the mean measured recovery of a.i. in samples of fresh and incubated samples.

<sup>4</sup> Actual applied doses were calculated using the following formula:

Average analysed concentration x diet's density x food amount / 1000



## Appendix 11: Certificate of Analysis of Buprofezin technical



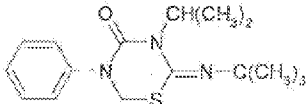
NIHON NOHYAKU CO., LTD. RESEARCH CENTER  
 345, OYAMADA-CHO, KAWACHI-NAGANO, OSAKA, JAPAN

No. AD16151

### Certificate of Analysis of Buprofezin Technical Grade

Lot Number: 6AD0025Z

#### General Information

Product Name	Buprofezin technical grade	Synonym	-
Common Name	Buprofezin	Related Product	Buprofezin
Lot Number	6AD0025Z		
Chemical Name	2- <i>tert</i> -butylimino-3-isopropyl-5-phenyl-3,4,5,6-tetrahydro-2H-1,3,5-thiadiazin-4-one		
Structural Formula			
Storage Conditions	Room temperature and dark condition		
Expiration Date	30 Aug. 2022 It has been established that this chemical substance was stable for 2204 days under the described storage conditions, referenced by LSRC-A01-023A. This substance would be stable for the same term from the date of analysis for the purity determination.		

#### Analytical Information

Purity & Identification	99.5% (RSD=0.04%, n=3) The chemical structure was identified by MS and IR Data. (Date of analysis: 17 Aug. 2016, Study number: G16PC001)
This analytical work was conducted in accordance with Good Laboratory Practice regulation. The raw data is retained in Nihon Ecotech Co., Ltd., Osaka Analysis Center, Kawachi-nagano, Osaka.	

(Signature)

Authorization Hiroyuki Nakanishi

NIHON NOHYAKU CO., LTD.

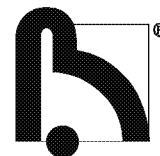
RESEARCH & DEVELOPMENT DIVISION, RESEARCH ADMINISTRATION UNIT

1 Sep. 2016

Issue date

THIS IS A TRUE COPY  
 OF ORIGINAL

DATE: 8 Mar 2018  
 NAME: Takashi Kato



## Appendix 12: Certificate of Analysis of the reference item

# Certificate of Analysis

**HPC**  
HPC Standards GmbH

672851 Lot: 775987

**Fenoxycarb**

### 1. General Information

Formula	C <sub>17</sub> H <sub>19</sub> NO <sub>4</sub>	Expiry Date	01.03.2021
Mol. Weight	301.40 g mol <sup>-1</sup>	Store at	20 °C
CAS-No.	72490-01-8		

### 2. Batch Analysis

Assay	98.3 %	Uncertainty	± 0.5 %
-------	--------	-------------	---------

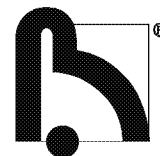
Certified on 15.03.2016

by Dr. Schulze

The reported uncertainty U is an expanded uncertainty according to EURACHEM / CITAC guide CG4 – Quantifying Uncertainty in Analytical Measurement – third edition and calculated  $U = k \cdot u_c$  using a coverage factor of  $k = 2$ , which gives a level of confidence of 95%.

The expiry date is based on the current knowledge and holds only for proper storage conditions in the originally closed flask. The information herein is believed to be correct, but is provided without warranty of any kind. The warranty for this product is limited to the purchasing price of this product.

HPC Standards GmbH · Am Wieseneck 7 · 04451 Cunnersdorf · Germany  
Phone +49-34291-337236 · Fax +49-34291-337239 · info@hpc-standards.com



## Appendix 13: GLP Certificate

STAATSMINISTERIUM  
FÜR UMWELT UND  
LANDWIRTSCHAFT



**Gute Laborpraxis/Good Laboratory Practice**  
**GLP-Bescheinigung/Statement of GLP Compliance**  
(gemäß/according to § 19b Abs. 1 Chemikaliengesetz)

Eine GLP-Inspektion zur Überwachung der Einhaltung  
der GLP-Grundsätze gemäß Chemikaliengesetz bzw.  
Richtlinie 2004/9/EG wurde durchgeführt in:

Assessment of conformity with GLP according to  
Chemikaliengesetz and Directive 2004/9/EC at:

☒ Prüfeinrichtung/Test facility

☐ Prüfstandort/Test site

**BioChem agrar Labor für biologische und chemische Analytik GmbH**  
**Kupferstr. 6**

**04827 Machern OT Gerichshain**

(unverwechselbare Bezeichnung und Adresse/Unequivocal name and address)

**Prüfungen nach Kategorien/Areas of Expertise**  
(gemäß/according ChemVwV-GLP Nr. 5.3/OECD guidance)

- 4 Ökotoxikologische Prüfungen zur Bestimmung der Auswirkungen auf  
aquatische und terrestrische Organismen  
environmental toxicity studies on aquatic and terrestrial organisms
- 5 Prüfungen zum Verhalten im Boden, im Wasser und in der Luft, Prüfungen  
zur Bioakkumulation und zur Metabolisierung  
studies on behaviour in water, soil and air; bioaccumulation
- 6 Prüfungen zur Bestimmung von Rückständen  
residue studies

**Datum der Inspektion/Date of inspection**  
(Tag.Monat.Jahr/day.month.year)

28./29. Oktober 2015

Die/Der genannte Prüfeinrichtung/Prüfstandort befindet  
sich im nationalen GLP-Überwachungsverfahren und wird  
regelmäßig auf Einhaltung der GLP-Grundsätze  
überwacht.

The above mentioned test facility/test site is  
included in the national GLP Compliance  
Programme and is inspected on a regular basis.

Auf der Grundlage des Inspektionsberichtes wird hiermit  
bestätigt, dass in dieser Prüfeinrichtung/diesem  
Prüfstandort die oben genannten Prüfungen unter  
Einhaltung der GLP-Grundsätze durchgeführt werden  
können.

Based on the inspection report it can be confirmed,  
that this test facility/test site is able to conduct the  
aforementioned studies in compliance with the  
Principles of GLP.

**Unterschrift, Datum/Signature, Date**



*Dr. Bernd Maurer, 16.03.2016*

Dr. Bernd Maurer

Referatsleiter / Head of Division

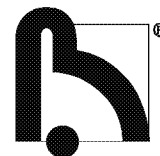
(Name und Funktion der verantwortlichen Person/Name and function of responsible person)

Sächsisches Staatsministerium für Umwelt und Landwirtschaft

Postfach 10 05 10

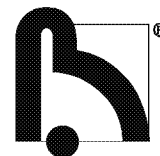
01076 Dresden

Name und Adresse der GLP-Überwachungsbehörde/Name and address of the GLP Monitoring Authority)



**Appendix 13 (continued): GLP Certificate (Translation)**

<b>STAATSMINISTERIUM FÜR UMWELT UND LANDWIRTSCHAFT</b>	State Ministry of the Environment and Agriculture
<b>Freistaat SACHSEN</b>	Free State of Saxony
	Free State of Saxony  Saxon State Ministry of the Environment and Agriculture



## Appendix 14: Study plan (including amendment(s) to the study plan)

Kupferstraße 6 · D-04827 Machern OT Gerichshain  
Tel. 03 42 92/8 63-0 · Fax 03 42 92/8 63-22  
Ust.ID-Nr. DE 812651762  
biochemagr@biochemagr.de  
[www.biochemagr.de](http://www.biochemagr.de)



### STUDY PLAN

**Buprofezin technical - Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)**

#### Method according to

Guidance Document on Honey Bee Larval Toxicity Test following Repeated Exposure,  
Series on Testing and Assessment, No. 239, OECD (2016)

#### Project identification

BioChem project No.: 18 48 BLC 0021

#### Test item

Buprofezin technical

#### Sponsor

Nihon Nohyaku Co., Ltd.  
Kyobashi OM Bldg.,  
19-8, Kyobashi 1-Chome, Chuo-Ku  
Tokyo 104-8366  
Japan

#### Study Monitor

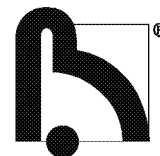
Junko Ikuta  
Nihon Nohyaku Co., Ltd.

#### Study Director

Kathrin Scheller  
BioChem agrar GmbH

#### Test Facility and Test Site for Analytical Phase

BioChem agrar  
Labor für biologische und chemische Analytik GmbH  
Kupferstr. 6  
04827 Machern OT Gerichshain, Germany



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
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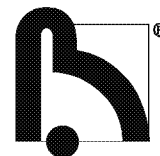
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## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

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### 1 Objective

The purpose of this study is to determine the chronic toxicity (LD/LC<sub>50/2010</sub> for larval and pupal mortality on day 8 (D8) and D15, and ED/EC<sub>50/2010</sub> for adult emergence rate and bee weight on D22 as well as NOED and NOEC for D8, D15 and D22) of the test item applied to honey bee, *Apis mellifera* L., larvae in an *in vitro* test after repeated oral application. The test item will be administered to the larvae at a constant concentration in the diet according to their growth, within a range of five increasing doses spaced by a factor of  $\leq 3$ . Cumulative mortalities of honey bee larvae treated with the test item will be assessed daily from Day 4 to Day 8. Cumulative mortalities during the pupal phase will be assessed on day 15 and on day 22. All mortalities will be compared to the control. The adult emergence rate and bee body weight will be assessed on day 22.

This study is based on the following guideline(s):

- OECD (2016), Guidance Document on Honey Bee Larval Toxicity Test following Repeated Exposure, Environment Monograph, Series on Testing and Assessment, No. 239, OECD, Paris
- Adaptations based on SCHMEHL *et al.* (2016) including: 1) diet composition (more water and less royal jelly in diets A and B); 2) a pre-pupal transfer step to a new culture plate on D7-8, and 3) changes to the rearing environment (no use of glycerol or sterilizing solution, a lid placed upon the culture plates throughout development, no emergence box).

### 2 Justification for selection of the test system

Data on the toxicity to the honey bee *Apis mellifera* L. are being generated in order to comply with international regulations for new and re-registrations of plant protection products. The honey bee is a representative non-target organism, and is the most important pollinator for many fruit, nut and vegetable crops.

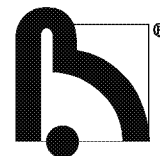
### 3 Expected time schedule

Study Initiation:	August 2018
Experimental Starting:	August 2018
Experimental Completion:	September 2018
Draft Report:	November 2018

### 4 Contact details

Sponsor address:	Nihon Nohyaku Co., Ltd. Kyobashi OM Bldg., 19-8, Kyobashi 1-Chome, Chuo-Ku Tokyo 104-8386, Japan	
Study Monitor:	Junko Ikuta Registration Department Market Development Division Nihon Nohyaku Co., Ltd.	Phone: +81 (0) 3 6361 1411 Email: ikuta-junko@nichino.co.jp
Test Facility and Test Site for analytical phase:	BioChem agrar Labor für biologische und chemische Analytik GmbH Kupferstraße 6 04827 Machern OT Gerichshain, Germany	
Management of Test Facility and of Test Site for analytical phase:	Gernot Renner BioChem agrar GmbH	Phone: +49 (0) 34 292 863 10 Email: gerno.trenner@biochemagrar.de





## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
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Study Director:	Kathrin Scheller BioChem agrar GmbH	Phone: +49 (0) 34 292-863 66 Email: kathrin.scheller@biochemagrار.de
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Quality Assurance: (Analytical Phase)	Peggy Landsmann BioChem agrar GmbH	Phone: +49 (0) 34 292-863 72 Email: peggy.landsmann@biochemagrار.de

### 5 Material and methods

#### 5.1 Control

The control (AC) will be fed with untreated artificial diet containing 0.5% (v/v) water. An additional control treatment (BC) will serve as a solvent control, where the nutrient medium will contain 0.5% (v/v) acetone.

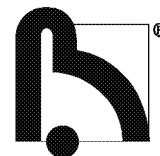
#### 5.2 Test item

The sponsor is responsible for correct test item specification and identity. The test item and all data concerning test item identification and description of its characteristics were provided by the sponsor. This characterization was carried out by the sponsor.

Name:	Buprofezin technical
Batch No.:	6AD0025Z
Received:	13 March 2018
Expiry date:	30 August 2022
Substance type:	Technical compound
Active ingredient:	Buprofezin
Analyzed purity:	99.5 ± 0.04%
Appearance <sup>1</sup> :	White to pale yellowish crystalline powder
Degradation:	Stable under the below described storage conditions (stability was confirmed for 2204 days)
Storage conditions:	Store at room temperature and in dark condition
Solubility in water (25 °C) <sup>1</sup> :	0.46 mg/L
Solubility in acetone (20 ~ 22 °C) <sup>1</sup> :	253000 mg/L
Vapor pressure (20 °C) <sup>1</sup> :	4.2 x 10 <sup>-5</sup> Pa
Partition coefficient (n-octanol/water) <sup>1</sup> :	Log Po/w = 4.93 (pH7)
Safety precautions:	Consideration of the safety measures in general use with handling of plant protection products
Further details:	Certificate of Analysis of 01 Sept 2016 Safety data sheet of 06 Jan 2016

The test item not used for other studies of the sponsor (with the exception of the retention sample) will be disposed of or returned to the sponsor after completion of the study.

<sup>1</sup> According to Safety Data Sheet from 06 Jan 2016



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### 5.3 Reference item (toxic standard)

Fenoxycarb will be the reference substance and will be applied at a rate of 0.32 mg a.i./kg (equivalent to 0.051 µg a.i./larva). Termination will occur on D22.

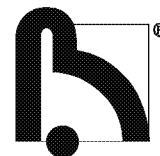
Name: Fenoxycarb tech.  
Batch No.: 775987  
Received: 07 Sept 2016  
Expiration date: 01 Mar 2021  
Substance type: Technical compound  
Active ingredient: Fenoxycarb  
Analyzed purity: 98.3% (w/w)  
Storage conditions: Store at 20°C  
Safety precautions: Consideration of the safety measures in general use with handling of plant protection products  
Further details: Certificate of Analysis of 15 Mar 2016  
Safety Data Sheet of 05 Mar 2018

### 5.4 Chronology of the test

Larvae of the species *Apis mellifera* L. will be repeatedly exposed to the test item by way of oral application. The main objective of the test item dosage setting is to obtain a dose-response relationship for adult emergence up to D22 (e.g. ED/EC<sub>50/20/10</sub>, LD/LC<sub>50/20/10</sub>, NOED and NOEC). The application of test and reference item will take place on the third, fourth, fifth and sixth day (D3 to D6) after hatch. After repeated exposure to the test item, larvae will be incubated in the climate chamber, which will be set to 34.5 °C and with adjusted humidity depending on the stage of development. The test conditions are described in detail in chapter 5.7.2 of the study plan. On day 22 after hatch (D22), the adult emergence and bee body weight will be assessed. A chronology of the test is given in Table 1.

Table 1: Chronology of the test

Test phase	Day (D)	Description
Pre-grafting (non-GLP)	D-3	Confining of queen on comb in excluder cage in the hive
	D-2	Check for eggs; Releasing queen and confining comb again in excluder cage; incubation in the hive
	D-1	Incubation in the hive
	D0	Incubation in the hive
Grafting & pre-exposure	D1	Removing comb from the hive; grafting of L1-larvae, feeding untreated diet; incubation in climate chamber
Pre-exposure	D2	Incubation in climate chamber
Exposure	D3	Application
	D4-D6	Application; Assessment of larval mortality and of sublethal effects
Post-exposure	D7-D8	Assessment of larval mortality and of sublethal effects
	D8	Transfer of pre-pupae to cellulose tissue on a new culture plate; adjustment of climate conditions
	D8-D15	Incubation
	D15	Adjustment of climate conditions; assessment of pupal mortality and of sublethal effects
	D15-D22	Incubation
Termination	D22	Assessment of adult emergence and bee body weight



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### 5.5 Scope of the test

The application of test and reference item will take place on D3 (mixed into diet B) as well as on D4-D6 (mixed into diet C). The composition of diet B and C will be described in Table 3. Test solutions will be prepared every day right before administration of food. The concentration of the respective items in the solutions remains stable during the application phase, while the absolute amount of consumed active substance (daily dose) increases with the age of the larvae. The stock solution for the reference item fenoxycarb will be prepared on D3 and will be stored in the fridge for further use on D4, D5 and D6 because it is stable under these conditions. In total, the items will be applied as described in Tables 2 & 3.

**Table 2: Scope of the test**

Treatment group	Test solution ID	Item to be applied	Cumulative dose [µg total a.i./larva]	Concentration [mg a.i./kg food] <sup>3</sup>
Controls	AC	Diet B/C + 0.5% v/v water	-	-
	BC	Diet B/C + 0.5% v/v acetone	-	-
Test item	AT	Buprofezin technical <sup>1</sup>	100.18	633.80
	BT		50.09	316.90
	CT		25.04	158.45
	DT		10.02	63.38
	ET		1.00	6.34
Reference item	AR	Fenoxycarb technical <sup>2</sup>	0.051	0.32

<sup>1</sup> Based on analyzed purity, applied in 0.5% v/v acetone

<sup>2</sup> Based on analyzed purity

<sup>3</sup> Based on a density of 1.15 g/mL of the aqueous sugar solution and 1.13 g/mL of diet B/C  
Calculations are performed with non-rounded values.

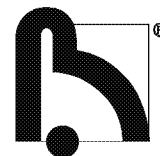
### 5.6 Test method

First instar honey bee larvae (L1) from at least three different, healthy colonies will be transferred into grafting cells placed in 48-well cell culture plates and exposed to untreated or treated artificial diets. Different compositions of the artificial diet (diet A, B and C; composition of the diets to find in Table 3) will be used adapted to the needs of the larvae at different stages of development. The larvae/pupae will be kept under controlled environmental conditions.

On the third, fourth, fifth and sixth day after hatch (D3-D6), the larvae will be exposed to artificial diet containing the test item at a suitable range of test concentrations. Larvae found dead until D3 before first application will be replaced by healthy larvae of the same age. Therefore, on the day of grafting, additional plates will be prepared to be able to replace dead larvae on D3.

During the larval and pupal stages, mortality and other observations (e.g. morphological differences with control) will be assessed on several occasions. Any larvae/pupae found dead during the assessments will be removed immediately. The main assessments will be the larval mortality on D8 (120 h after first application), the pupal mortality on D15 and the evaluation of adult emergence and assessment of bee body weight on D22. The presence of unconsumed food on D8 will be qualitatively reported.

In order to provide a regression curve and to establish a median lethal an effect dose/concentration (LD/LC<sub>50/20/10</sub> and ED/EC<sub>50/20/10</sub>) and a NOED/NOEC in a dose-response test, the doses/concentrations are selected with the intention to cause no or only low mortality in the lowest tested dose/concentration, an increasing effect in the medium tested doses/concentrations and mortality > 50% in the highest tested dose/concentration.



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A preliminary range-finding test was performed under non-GLP conditions before the main test. The test item dosage of the main test is based on the results of the preliminary range-finding test, whose results are given Appendix 1.

Additionally, prior to the range finder, the solubility for the highest intended range finder dose/concentration was visually assessed and the homogeneous distribution of test item in the final diet for all intended range finder doses/concentrations was assessed by analytical measurement. Solubility and homogeneity was confirmed. Detailed information will be reported.

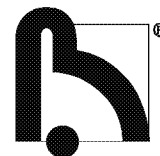
### 5.7 Performance of the test

#### 5.7.1 Test system

Test organism:	Honey bee – <i>Apis mellifera</i> L., ssp: <i>Buckfast</i> (Hymenoptera, Apoidea): First instar larvae (L1 during grafting) of queen-right colonies in good health condition are used for the test. For each test, larvae will be collected from at least three different colonies, each representing a replicate in order to avoid genetic influences on the test outcome.
Source of the test organism:	Will be reported
Pre-treatment culturing conditions:	The bee colonies producing the larvae will be held under field conditions according to good beekeeping practice. In the hives a healthy queen and brood in egg, larval and pupal stages will be present. To ensure that bees are not in a period of starvation combs will contain a sufficient amount of nectar and pollen. No treatment with chemicals (e.g. antibiotics, anti-varroa, etc.) is allowed within the four weeks preceding the start of the test.
Health status (non-GLP):	Examinations at least for <i>Varroa destructor</i> , <i>Nosema</i> spp. and foulbrood will be carried out by the beekeeper or trained staff.
Age of the larvae at grafting:	First instar larvae (L1)

#### 5.7.2 Test conditions

Method of producing L1 larvae:	<p>The following procedure will be repeated in at least three colonies: On day -3 (D-3) the respective queen of the colony will be caged on an empty brood comb, which will be fitted in an excluder cage and thereafter placed in the hive. The queen will lay her eggs solely on this comb. The caging time will be 24-30 h. In the afternoon of day -2 (D-2) the queen will be released from the excluder. The comb will be checked for the presence of freshly laid eggs and will be confined in the excluder again in order to avoid any additional egg laying. To ensure that nurse bees accept the respective comb with eggs as part of the brood nest, the comb enclosed in the excluder cage will be placed near to frames containing open brood.</p> <p>The eggs will be incubated within the hive between day -2 (D-2) and day 1 (D1). This time schedule will ensure that the age of respective larvae will be defined and uniform on the day of grafting on day 1 (D1).</p>
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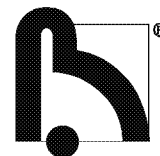


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Grafting:	<p>On D1 the combs containing larvae will be transported from the hive to an acclimatized laboratory room (high air humidity and warm temperature) using a polystyrene box.</p> <p>Larvae will be transferred from the combs to a cell using a suitable grafting tool (e.g. grafting needle Swiss type). During grafting, the larvae will be placed on the surface of the artificial diet within the grafting cell. Each replicate represents larvae originating from a different colony to exclude colony effects.</p>
Test cages:	<p>Crystal polystyrene grafting cells (e.g. CNE Nicotplast, internal diameter 9 mm) will be placed in three groups on each well plate, which will be labeled with at least study number and treatment group replicate number. The plates will be placed on an adjustable heating plate (e.g. stretching table), which will be set to 35 °C). Artificial diet A will be pipetted into the grafting cells, followed by placing one freshly grafted larva per cell.</p>
Sanitary methods:	<p>Grafting cells will be disinfected (e.g. in a 70% ethanol bath for 30 minutes) followed by drying of the cells under laminar flow.</p> <p>Sterile equipment will be used (e.g., culture well plates from Nunclon™ and one-way pipette tips, Eppendorf). Before and during the transfer of larvae, grafting tools will be disinfected in 70% ethanol regularly. Sugar solution will be sterilized at a suitable filtration apparatus (mesh size: 0.20 µm) before mixing with the royal jelly.</p> <p>The Plexiglas desiccator will be cleaned with 70% ethanol. Any surface in the laboratory will be disinfected with a ready to use disinfectant for medical devices (e.g. Bacillot plus).</p> <p>During grafting personnel will use surgical masks.</p> <p>After each application, glass flasks and beakers used will be cleaned in a dishwasher.</p>
Feeding scheme:	<p>The aqueous sugar solutions as one component of the artificial diets will be prepared prior to the test and stored in a fridge or freezer until use. The sugar solution will be mixed with royal jelly every day before each feeding occasion. The royal jelly will be as fresh as possible, stored refrigerated until use. Royal jelly will be analyzed for the presence of e.g. antibiotics, insecticides and other pesticides prior to the study and the results will be forwarded to the Sponsor and will be included in the final report. Royal jelly found to be contaminated with antibiotics will not be used. Depending upon the levels detected, royal jelly with some detectable pesticides may be used upon consultation with the Sponsor.</p> <p>Each larva will be fed separately using a sterile pipette. The food drop will be placed next to the larvae to avoid drowning. Before feeding, the final diets will be warmed by placing the covered vessels into the water bath. During the process, the culture plate in operation will be placed on the warming plate. The volumes and contents of diets A, B and C are presented in Table 3.</p>



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**Table 3: Feeding Scheme**

Test day	1 <sup>1</sup>	2	3 <sup>2</sup>	4 <sup>2</sup>	5 <sup>2</sup>	6 <sup>2</sup>
Artificial diet	A <sup>3</sup>	-	B	C	C	C
Volume of diet per larva	20 µL	-	20 µL	30 µL	40 µL	50 µL
Composition of diets:						
Royal jelly	44.25% w/w	-	50% w/w		50% w/w	
Sugar solution	55.75% w/w		50% w/w		50% w/w	
Composition of sugar solution:						
Glucose	9.50% w/w		15% w/v		18% w/v	
Fructose	9.50% w/w	-	15% w/v		18% w/v	
Yeast	1.61% w/w		3% w/v		4% w/v	
Water	79.39% w/w		~ 67% w/v <sup>4</sup>		~ 60% w/v <sup>4</sup>	

<sup>1</sup> Day of grafting

<sup>2</sup> Days of application

<sup>3</sup> Diet A will contain a higher amount of water in order to reduce propensity of drying out (according to SCHMEHL *et al.*, 2016).

<sup>4</sup> Approximated amount of deionized water. This value converges to the actual amount of water, which will be needed for filling up glucose, fructose and yeast to the final volume of sucrose solution.

Rearing environment of later stages of development:

On D8 the tested organisms will have developed into pre-pupae. The pre-pupae will be gently transferred into new 48-well plates coated with cellulose tissue (e.g., Kimtech Precision Wipes, Kimberly-Clark, Surrey, UK) and climatic conditions will be adjusted (decreased relative humidity) (SCHMEHL *et al.*, 2016). For adult emergence, relative humidity will again be reduced.

Climatic chamber:

Temperature: 34.5 ± 0.5 °C  
Relative humidity: D1 – D8: 95 ± 5%  
D8 – D15: 80 ± 5%  
D15 – D22: 60 ± 10%  
Deviations: Short-term deviations of 30 minutes or less per event will not be reported, if they occur within the following boundaries: 23 – 40 °C and 40 – 100% rH. Exceptions may occur during the feeding occasions and the cleaning procedure.  
Recording: Continuously  
Ventilation: A possible accumulation of pesticide vapor is avoided by the air-conditioning equipment of the test chamber.  
Illumination: Constant darkness within the test chamber (diffuse artificial light only during handling and assessments)

Test duration:

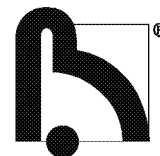
Pre-grafting: D-3 to D0  
Grafting: D1  
Pre-exposure: D1 to D2  
Application: D3 to D6  
Post exposure: D7 to D22

Number of larvae/replicate:

12

Number of replicates:

3 (placed on one culture plate)



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Number of concentrations  
 (Dose-response test):

Control: 2  
 Test item treatment: 5  
 Reference item treatment: 1

Completion of the test:

After the last assessments on D22, the culture plates with all organisms used in the test will be placed in a freezer (at -18 °C) and discarded afterwards following the Test Facility's SOP.

### 5.7.3 Method of application

The test item will be dissolved in acetone<sup>2</sup> gaining test item base stock (BS<sub>t</sub>). Several dilutions will be prepared by adding further acetone (Stock A, B, C and so on). The final feeding solutions for application (AT, BT, CT and so on) will be prepared by mixing the previously compounded Stock solutions A to E with the diet B/C in a fixed volumetric relation (volumetric part of stock solutions being 0.5% of the final feeding solutions). Detailed information on the test solution preparation will be given in the final report.

To ensure a homogeneous distribution of the test item within the larval food, the final diets will be placed on a multitube vortexer for 5 minutes. In order to avoid unequal distribution of the test item among the larvae of each treatment group, potentially occurring bubbles will be eliminated from the final diets with appropriate methods (e.g., degasification by ultrasonics) prior to feeding.

Before feeding, the final diet will be warmed up in the water bath, which is set to 34.5 °C. The larvae will be fed with a defined quantity of the respective test item concentration (concentration series). This test will be performed by way of individual feeding of each larva according the scheme described in Table 3.

This description also applies for the reference item.

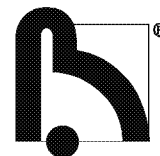
For some compounds at higher concentrations, the rejection of test doses may result in little or no food consumption. Any observation concerning repellency will be assessed and described in the final report.

On each day of application, a sample of each feeding solution (AT to ET and control) will be taken and stored deep frozen until use in the analytical phase. It has been established that the chemical substance buprofezin technical was stable for 2204 days under the storage conditions (room temperature and dark condition) described in the Certificate of Analysis of 01 Sept 2016.

Order of application:

- Control and solvent control
- Test item (from the lowest to the highest concentration)
- Reference item

<sup>2</sup> A solvent is required due to the poor solubility of the test item in water (0.046 mg/L). Solubility in acetone is 253000 mg/L. Further details on solubility/homogeneity testing will be reported.



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### 5.7.4 Assessments during the test

Mortality:	<ul style="list-style-type: none"> <li>- Number of dead larvae (an immobile larva or one which does not react to contact stimulus is noted as dead), daily on D4 to D8 (larval mortality)</li> <li>- Number of dead pupae (larvae that had not transformed into pupae on D15) on D15 (pupal mortality)</li> </ul>
Adult emergence:	Number of adult bees until D22
Emerged bee bodyweight:	Weight of adult bees that survived until D22
Other observations:	<p>Noted during the mortality assessments and to aid in the interpretation of mortality data, comprising e.g.:</p> <ul style="list-style-type: none"> <li>- F (food left, assessed only on D8),</li> <li>- S (small body size),</li> <li>- A (abnormal moving behavior in terms of increased activity)</li> <li>- B (black spots or other discolorations indicating sickness - the test item's color is not to be noted as abnormal discoloration of any larvae)</li> </ul>

### 5.8 Validity criteria

Larval mortality in the control:	≤ 15% for larvae across all control replicates (between D3 and D8)
Adult emergence rate:	≥ 70% for <i>Apis mellifera</i> L. across all control replicates (between D3 and D22)
Reference item emergence rate:	≤ 20% for larvae exposed to a total of 0.051 µg fenoxycarb/larva across all reference replicates (between D3 and D8)

### 5.9 Calculation and statistics

The evaluation of the median lethal doses/concentrations (LD<sub>x</sub>/LC<sub>x</sub>) for D8 and D15, of the effect doses/concentrations (ED<sub>x</sub>/EC<sub>x</sub>) for D22, and of the no observed effect dose/concentration (NOED/NOEC) will be carried out using a statistical program, e.g. ToxRat Professional (RATTE). Calculations will be performed for the following endpoints: Larval (D8) and pupal (D15) mortality; adult emergence up to D22.

#### Determination of NOED and NOEC:

A sequence of pre-testing will be performed before final statistical testing. These pre-tests for quantal data with binominal distribution will include testing for (1) monotonicity (trend analysis by contrasts,  $p \leq 0.05$ ) and (2) extra-binomial variance (Tarone's test,  $p \leq 0.01$ ). The method of choice for final testing will be dependent on pretesting results (preferred: Step-down-Cochran-Armitage,  $p \leq 0.05$ ).

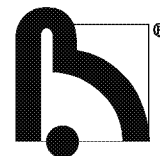
#### Determination of LD<sub>x</sub>/LC<sub>x</sub> and ED<sub>x</sub>/EC<sub>x</sub>:

For each test item dose/concentration the corrected mortality will be calculated according to Abbott (1925), modified by SCHNEIDER-ORELLI (1947), following the formula F1:

$$M_{\text{corr}} [\%] = \frac{(M_t - M_c)}{(100 - M_c)} * 100\% \quad [F1]$$

$M_{\text{corr}}$	Corrected mortality [%]
$M_c$	Mortality of the control group [%]
$M_t$	Mortality of the test group [%]





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The resulting data will be used to estimate at least the median lethal and effect doses ( $LD_{50}$ ;  $ED_{50}$ ) and the median lethal and effect concentrations ( $LC_{50}$ ;  $EC_{50}$ ), along with the 95% confidence limits, by fitting it to a linear regression model (e.g. Probit or Logit model). If the linear regression model is not applicable, another appropriate method, e.g. Trimmed Spearman-Kärber procedure, will be used.

If  $NOED/NOEC$  or  $ED_{50}/EC_{50}$  is determined to be below the lowest test item dose/concentration, this will be reported to the Study Monitor. If the experimental phase of the study might be repeated, an amendment to the study plan would be issued describing possibly changed testing conditions (e.g. a different range of test item concentrations).

### Calculation of applied concentrations and doses:

The **test item concentration** (highest concentration) applied during the test was calculated using the formula F2.

$$\beta \text{ [g a.i./kg food]} = \frac{m_{TI} \text{ [g]}}{V_{DM} \text{ [mL]}} * \frac{V_{BSI} \text{ [mL]}}{V_{SA} \text{ [mL]}} * c_{a.i.} \text{ [g/kg]} * \frac{V_{SI} \text{ [mL]}}{m_{diet} \text{ [g]}} \quad [F2]$$

$\beta$	Mass concentration of a.i. in the diet
$m_{TI}$	Amount of test item
$V_{DM}$	Volume of dilution medium to prepare base stock solution
$V_{BSI}$	Volume of base stock solution used to prepare first dilution
$V_{SA}$	Final volume of first dilution (= Stock solution A)
$c_{a.i.}$	Content of a.i. in the test item
$V_{SI}$	Volume of stock solution for spiking the diet
$m_{diet}$	Weight of final diet, spiked with test item

The concentrations of further diets are calculated by dividing by dilution factor ( $\leq 3.0$ ).

The **test item dose** (highest dose) applied to each larva during the test was calculated using the formula F3.

$$\text{Cumulative dose } [\mu\text{g a.i./larva}] = \beta \text{ [mg a.i./kg food]} * \sum_{diet/larva} \text{ [mL diet]} * d_{diet} \text{ [g/mL]} \quad [F3]$$

$\beta$	Mass concentration of a.i. in the diet
$\sum_{diet/larva}$	Sum of applied amount food during larval development
$d_{diet}$	Density of applied diet

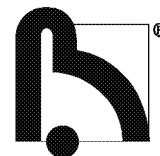
### Calculation of emerged bee bodyweight

The mean body weight of successfully emerged bees until D22 will be calculated for each replicate and each treatment. The treatments will be compared with the controls for differences in emerged bee bodyweight using a statistical test, e.g. Williams' Multiple t-Test.

## 5.10 Sampling for analysis

Sampling procedure:

Each final diet (AT to ET and control) will be sampled in duplicate to provide analysis and retain samples directly after preparation on D3, D4, D5, and D6. Before sampling, the diet will be filled in empty queen cups, simulating the feeding procedure. Then, there will be one sampling directly after filling the cups (at 0hrs). A second sampling will be performed 24hrs after filling the cups to check for stability of the test item in the artificial diet under the exposure conditions ( $34.5 \pm 0.5$  °C,  $95 \pm 5\%$  rH). Therefore, the samples will be incubated for 24hrs under the same conditions the larvae need for their development.



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Analysis samples will be stabilized if necessary and stored deep-frozen at  $\leq -18^{\circ}\text{C}$  until use in the analytical phase. With the removal of the samples from the freezer for the analytical phase, responsibility for the specimens will be granted to the Principal Investigator.

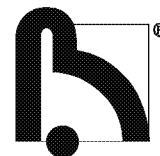
Retain samples will remain stored at  $\leq -18^{\circ}\text{C}$  until requested for additional analysis, if necessary. Not needed retain samples will be disposed after the finalization of the study.

Identification of specimens:

Each sample will be coded for identification with a unique sample number and with at least the BioChem project number and sampling date, according to Tables 4 & 5.

**Table 4: Specimen identification (sampling after 0hrs, not incubated)**

Specimen identification		Sampling time	Matrix	Specimen description
Analysis sample	Retain sample			
18BLC0021-D3-BC-A	18BLC0021-D3-BC-R	D3	Final diet	Solvent control
18BLC0021-D3-AT-A	18BLC0021-D3-AT-R	D3	Final diet	AT
18BLC0021-D3-BT-A	18BLC0021-D3-BT-R	D3	Final diet	BT
18BLC0021-D3-CT-A	18BLC0021-D3-CT-R	D3	Final diet	CT
18BLC0021-D3-DT-A	18BLC0021-D3-DT-R	D3	Final diet	DT
18BLC0021-D3-ET-A	18BLC0021-D3-ET-R	D3	Final diet	ET
18BLC0021-D4-BC-A	18BLC0021-D4-BC-R	D4	Final diet	Solvent control
18BLC0021-D4-AT-A	18BLC0021-D4-AT-R	D4	Final diet	AT
18BLC0021-D4-BT-A	18BLC0021-D4-BT-R	D4	Final diet	BT
18BLC0021-D4-CT-A	18BLC0021-D4-CT-R	D4	Final diet	CT
18BLC0021-D4-DT-A	18BLC0021-D4-DT-R	D4	Final diet	DT
18BLC0021-D4-ET-A	18BLC0021-D4-ET-R	D4	Final diet	ET
18BLC0021-D5-BC-A	18BLC0021-D5-BC-R	D5	Final diet	Solvent control
18BLC0021-D5-AT-A	18BLC0021-D5-AT-R	D5	Final diet	AT
18BLC0021-D5-BT-A	18BLC0021-D5-BT-R	D5	Final diet	BT
18BLC0021-D5-CT-A	18BLC0021-D5-CT-R	D5	Final diet	CT
18BLC0021-D5-DT-A	18BLC0021-D5-DT-R	D5	Final diet	DT
18BLC0021-D5-ET-A	18BLC0021-D5-ET-R	D5	Final diet	ET
18BLC0021-D6-BC-A	18BLC0021-D6-BC-R	D6	Final diet	Solvent control
18BLC0021-D6-AT-A	18BLC0021-D6-AT-R	D6	Final diet	AT
18BLC0021-D6-BT-A	18BLC0021-D6-BT-R	D6	Final diet	BT
18BLC0021-D6-CT-A	18BLC0021-D6-CT-R	D6	Final diet	CT
18BLC0021-D6-DT-A	18BLC0021-D6-DT-R	D6	Final diet	DT
18BLC0021-D6-ET-A	18BLC0021-D6-ET-R	D6	Final diet	ET



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 14 of 19



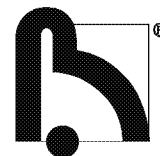
**Table 5: Specimen identification (sampling after 24hrs, incubated)**

Specimen Identification		Sampling time	Matrix	Specimen description
Analysis sample	Retain sample			
18BLC0021-D3-BC-24hr-A	18BLC0021-D3-BC-24hr-R	D4	Final diet	Solvent control
18BLC0021-D3-AT-24hr-A	18BLC0021-D3-AT-24hr-R	D4	Final diet	AT
18BLC0021-D3-BT-24hr-A	18BLC0021-D3-BT-24hr-R	D4	Final diet	BT
18BLC0021-D3-CT-24hr-A	18BLC0021-D3-CT-24hr-R	D4	Final diet	CT
18BLC0021-D3-DT-24hr-A	18BLC0021-D3-DT-24hr-R	D4	Final diet	DT
18BLC0021-D3-ET-24hr-A	18BLC0021-D3-ET-24hr-R	D4	Final diet	ET
18BLC0021-D4-BC-24hr-A	18BLC0021-D4-BC-24hr-R	D5	Final diet	Solvent control
18BLC0021-D4-AT-24hr-A	18BLC0021-D4-AT-24hr-R	D5	Final diet	AT
18BLC0021-D4-BT-24hr-A	18BLC0021-D4-BT-24hr-R	D5	Final diet	BT
18BLC0021-D4-CT-24hr-A	18BLC0021-D4-CT-24hr-R	D5	Final diet	CT
18BLC0021-D4-DT-24hr-A	18BLC0021-D4-DT-24hr-R	D5	Final diet	DT
18BLC0021-D4-ET-24hr-A	18BLC0021-D4-ET-24hr-R	D5	Final diet	ET
18BLC0021-D5-BC-24hr-A	18BLC0021-D5-BC-24hr-R	D6	Final diet	Solvent control
18BLC0021-D5-AT-24hr-A	18BLC0021-D5-AT-24hr-R	D6	Final diet	AT
18BLC0021-D5-BT-24hr-A	18BLC0021-D5-BT-24hr-R	D6	Final diet	BT
18BLC0021-D5-CT-24hr-A	18BLC0021-D5-CT-24hr-R	D6	Final diet	CT
18BLC0021-D5-DT-24hr-A	18BLC0021-D5-DT-24hr-R	D6	Final diet	DT
18BLC0021-D5-ET-24hr-A	18BLC0021-D5-ET-24hr-R	D6	Final diet	ET
18BLC0021-D6-BC-24hr-A	18BLC0021-D6-BC-24hr-R	D7	Final diet	Solvent control
18BLC0021-D6-AT-24hr-A	18BLC0021-D6-AT-24hr-R	D7	Final diet	AT
18BLC0021-D6-BT-24hr-A	18BLC0021-D6-BT-24hr-R	D7	Final diet	BT
18BLC0021-D6-CT-24hr-A	18BLC0021-D6-CT-24hr-R	D7	Final diet	CT
18BLC0021-D6-DT-24hr-A	18BLC0021-D6-DT-24hr-R	D7	Final diet	DT
18BLC0021-D6-ET-24hr-A	18BLC0021-D6-ET-24hr-R	D7	Final diet	ET

## 6 Analytical phase

The analysis of the sampled test solutions will be part of this study (analytical phase) and will be conducted at BioChem agrar GmbH.

The PI (analytical phase) will describe the analytical phase in a phase plan which will be included in a study plan amendment issued and signed by the Study Director. A description of the method as well as the findings and evaluation of the analyses will be reported. The results of the method validation (specification, linearity, accuracy, precision and limit of quantification) will also be reported.



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 15 of 19



### 7 Reporting

After completion of the examinations, a final report will be written.

The final report will include but will not be limited to the following:

- Name and address of the sponsor, the Test Facility and the study schedule
- The names of the Study Director and other scientists and supervisory personnel involved in the study
- The signatures of the Study Director and the management
- The signed and dated reports of each of the individual scientists or other professionals involved in the study
- The quality assurance statement, signed by the QA
- A copy of the test facility's GLP-Certificate
- The statement of compliance, signed by the Study Director
- The identification of the test item, by either name or code number, concentration, purity, composition and properties, if data were given by the sponsor
- A description of the test system, including the materials used, a detailed description of application and treatment dose levels of the test item and the control, test conditions (temperature, relative humidity, photoperiod and light intensity)
- Source, age, method of culturing and handling of the test organisms
- A description of all methods used with references
- The dates of all study plan amendments
- A list of all deviations to the study plan
- A description of all circumstances that may have affected the quality or integrity of the study
- A description and assessment for all results including the data calculations and if necessary statistical analyses and chemical analysis
- The storage location of all data, study plan and final report and a retention sample of the test and reference item(s)
- A copy of the certificate of analysis
- Analytical phase report

### 8 GLP Compliance

All procedures described in this study plan including Standard Operating Procedures and filing of the raw data will be performed in compliance with the "Chemikaliengesetz" (Chemicals Act) of the Federal Republic of Germany, "Anhang 1" (Annex 1), (BGBl. I, 2013, amended 2016) based on the OECD Principles of Good Laboratory Practice (as revised in 1997; Environment Directorate, Organization for Economic Cooperation and Development, Paris 1998) and the Directive 2004/10/EC of 11 February 2004 amending Council Directive 87/18/EEC, which are accepted by regulatory authorities throughout the European Union, the United States of America (FDA and EPA) and Japan (MHLW, MAFF and METI) on the basis of intergovernmental agreements as well as with the OECD Consensus Document No. 13 (2002).

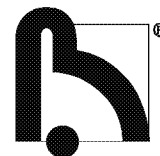
### 9 Quality Assurance

All QA activities will be co-ordinated by the Lead QA residing at the Test Facility.

Critical study phases are inspected by the Lead QA / Test Site QA according to a pre-determined schedule. These inspections will be study based. The Test Facility and all involved Test Sites will have a Quality Assurance with responsibilities and functions as described in the OECD GLP Guidelines. They will perform at least one inspection of a critical phase in this study.

The respective QA will also audit all raw data generated during the particular phase(s).

Written QA audit/inspection reports (and any other appropriate QA reports or documentation) including observations, comments of critical nature, findings and corrective actions taken by the PIs shall be provided to the Study Director, Test Site Management, Test Facility Manager and Lead QA within three weeks of completion of the audit/inspection. Deviations to the study plan have to be reported promptly to the Study Director. Audit/inspection reports shall include the dated signature of the PIs and Test Site



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
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Management. In case of no findings, it is possible to send audit/inspection reports on electronic way without signature.

Each QA will provide a QA Statement, which includes the phases or documents audited/inspected, the dates of audit/inspection, and the dates when the audits/inspections were reported to the PIs (if relevant), the Test Facility / Test Site Management and to the Study Director. This statement shall be signed by the responsible QA.

The Study Director or Lead QA may inspect critical phases if required, and the raw data will be made available for their examination.

Finally, the final report will be audited by the Lead QA. Relevant only for the analytical phase. The draft and the phase report will be audited by Test Site QA.

### 10 Amendments and study plan deviations

Amendments to the study plan need to be done in written form and need the agreement of the Study Director and of the Sponsor.

Unintended deviations from the study plan and/or SOPs will be recorded in the raw data. All study plan deviations, their reason as well as their influence on the test results will be described in the final report. The Study Monitor will be informed of any relevant deviation from the study plan as soon as discovered.

### 11 Archiving

The Test Facility will archive the following in compliance with national GLP regulations:

- All original raw data (with exception of raw data created during the analytical phase, which will be archived separately)
- Study plan (including amendments) and final report
- Documentation of inspections and examinations according to the quality assurance program
- Specifications of the staff qualification and education
- Retention samples of the test and reference items (will be archived only as long as the quality of the preparation permits re-evaluation)
- Correspondence in case of being relevant to the study

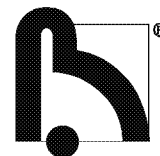
Test site related raw data will be stored according to the local GLP requirements, concerning e.g. specifications of the staff qualification and education.

No raw data or material relating to the study will be discarded without the sponsor's prior written consent.

### 12 Distribution list

Study plan (including amendments): Study Director (original)  
Study Monitor (electronic copy)  
Principal Investigator of analytical phase (electronic copy)

Final report: Study Director (original)  
Study Monitor (electronic copy)



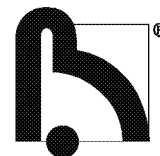
## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 17 of 19



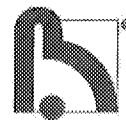
### 13 References

- ABBOTT WS: A method of computing the effectiveness of an insecticide. J. Econ. Entomol. 18, 265-267, 1925.
- Chemikaliengesetz in der Fassung der Bekanntmachung vom 28. August 2013 (BGBl. I S. 3498, 3991), das zuletzt durch Artikel 1 der Verordnung vom 22. Juni 2016 (BGBl. I S. 1479) geändert worden ist.
- Translation:  
Chemicals Act in the version published on 28 August 2013 (Federal Law Gazette I p. 3498, 3991), as last amended by article 1 of the Regulation of 22 June 2016 (Federal Law Gazette I p. 1479).
- Directive 2004/10/EC of 11 February 2004 amending Council Directive 87/18/EEC, Official Journal of the European Union N° L 50: 44 – 59
- EFSA (2013): EFSA Guidance Document on the risk assessment of plant protection products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees). EFSA Journal 11(7): 3295, 266 pp.
- ENV/JM/MONO (2016) 34: Guidance Document on Honey Bee Larval Toxicity Test following Repeated Exposure (OECD 239)
- Guidance Document on Terrestrial Ecotoxicology Under Council Directive 91/414/EEC. SANCO/10329/2002 rev 2 final, 17 October 2002.
- The application of the OECD Principles of GLP to the Organization and Management of Multi-Site Studies (ENV/JM/MONO(2002)9).
- OECD Principles of Good Laboratory Practice (as revised in 1997). ENV/MC/CHEM(98)17.
- RATTE M: ToxRat Professional (2015), ToxRat Solutions GmbH, Naheweg 15, 52477 Alsdorf, Germany
- SCHMEHL DR, TOMÉ HVV, MORTENSEN AN, FERREIRA MARTINS G, ELLIS JD: Protocol for the in vitro rearing of honey bee (*Apis mellifera* L.) workers. J. Api. Res. 55, 113-129, 2016.
- SCHNEIDER-ORELLI O: Entomologisches Praktikum. 1947. H.R. Sauerlander. Aarau. Schweiz.
- Translation:  
SCHNEIDER-ORELLI O: Entomological practical course. 1947. H.R. Sauerlander. Aarau. Switzerland.



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
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### 14 Confirmation of the study plan

Study Director:

K. Scheller 23 Aug 2018  
Kathrin Scheller Date

Quality Assurance Manager:

Dr. Eric Meizer 23 Aug 2018  
Dr. Eric Meizer Date  
Arlett Weiße

Test Facility Management:

Gernot Renner 23 May 2018  
Gernot Renner Date

Study Monitor:

Junko Ikuta 5 Nov. 2018  
Junko Ikuta Date

### 15 Acknowledgement of the study plan

The Principal Investigator (PI) will conduct the delegated phase in accordance with the study plan and the Principles of GLP for that phase.

Please sign this page BEFORE the phase will be started. After signature, please keep a copy for the test site's files and return the original to the Study Director.

Principal Investigator:  
(analytical phase)

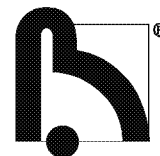
Anita Birke 06 Sept 2018  
Anita Birke Date

Quality Assurance:  
(analytical phase)

Peggy Landsmann 06 Sept 2018  
Peggy Landsmann Date

Test Site Management:  
(analytical phase)

Gernot Renner 06 Sept 2018  
Gernot Renner Date



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 19 of 19



### Appendix 1: Results of Range finder

A preliminary range-finding test (non-GLP) was performed prior to the main test. The rearing conditions (food composition, climate conditions, etc.) and all procedures deployed in the range finder were similar to those, which will be used in the main test.

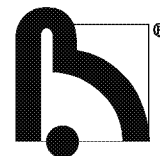
Treatment					AC <sup>1</sup>	BC <sup>2</sup>	
AT	BT	CT	DT	ET			
100.2	50.1	25.0	10.0	1.0			µg a.i./larva (D3-D6), spacer = 2.0
633.8	316.9	158.5	63.4	6.3			mg a.i./kg treated diet B/C
<b>34</b>	<b>35</b>	<b>35</b>	<b>36</b>	<b>35</b>	<b>35</b>	<b>34</b>	<b>surviving larvae on D8 out of 36</b>
-	3	-	-	-	-	-	larvae with sublethal effects within surviving:
-	-	-	-	-	-	-	- food left, small size, ...
							- visual abnormalities (e.g., black spots)
<b>18</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>29</b>	<b>30</b>	<b>27</b>	<b>successfully hatched on D22 out of 36</b>
50	83	86	89	81	83	75	successfully hatched on D22 [%]

<sup>1</sup> Untreated control (Diet B/C + 0.5% v/v water)

<sup>2</sup> Solvent control (Diet B/C + 0.5% v/v acetone)

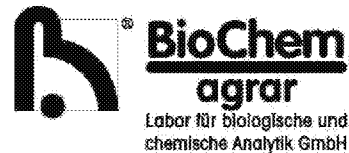
Based on the results from the range finder, the dose setting for the main test was established. In the honey bee larvae main test with repeated expose, the following doses will be applied: 100.18 – 50.09 – 25.04 – 10.02 – 1.00 µg a.i./larva.





## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Kupferstraße 6 · D-94827 Mochern OT Gerichshain  
Tel. 03 42 92/8 63-0 · Fax 03 42 92/8 63-22  
Ust.ID-Nr. DE 812651762  
[biochemagrar@biochemagrar.de](mailto:biochemagrar@biochemagrar.de)  
[www.biochemagrar.de](http://www.biochemagrar.de)



### Amendment No. 1 to the study plan

BioChem project No.: 18 48 BLC 0021  
Test item: Buprofezin technical  
Study title: Buprofezin technical - Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)  
Study Director: Kathrin Scheller  
Study Monitor: Junko Ikuta

#### 1 Item(s) to be amended

- a) Contact details (Chapter 4 of the study plan)
- b) Analytical phase (Chapter 6 of the study plan)

#### 2 Reason for the amendment

- a) Due to organisational reasons, another person has to act as Lead QA.
- b) Details of the analytical phase need to be amended.

#### 3 Description

a)

##### Previous version:

[...]

Quality Assurance (Lead QA):	Dr. Eric Melzer BioChem agrar GmbH	Phone: +49 (0) 34 292-863 12 Email: <a href="mailto:eric.melzer@biochemagrar.de">eric.melzer@biochemagrar.de</a>
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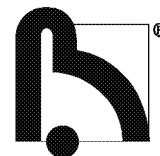
##### Updated version:

[...]

Quality Assurance (Lead QA):	Christiane Kunath BioChem agrar GmbH	Phone: +49 (0) 34 292-863 52 Email: <a href="mailto:christiane.kunath@biochemagrar.de">christiane.kunath@biochemagrar.de</a>
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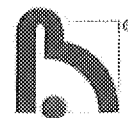
[...]

- b) Details of the analytical phase are described in the attachment of this document.



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Amendment No. 1 to the study plan 18 48 BLC 0021  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 2 of 2 (+ 8 pages attachment)



### 4 Impact on the study

None

### 5 Distribution of the amendment

Study Director (original)  
Study Monitor (electronic copy)  
Principal Investigator of analytical phase (electronic copy)

### 6 Confirmation of the amendment

Study Director:

K. Scheller 23 Nov 2018  
Kathrin Scheller Date

Quality Assurance (Lead QA):

C. Kunath 23 Nov 2018  
Christiane Kunath Date

Test Facility Management:

G. Renner 23 Nov 2018  
Gernot Renner Date

Study Monitor:

J. Ikuta 27 Nov. 2018  
Junko Ikuta Date

### 7 Acknowledgement of the amendment

Principal Investigator (analytical phase):

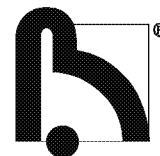
A. Birke 27 Nov 2018  
Anita Birke Date

Quality Assurance (analytical phase):

P. Landmann 23 Nov 2018  
Peggy Landmann Date  
Marcus Hempel

Test Site Management (analytical phase):

G. Renner 23 Nov 2018  
Gernot Renner Date



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Kupferstraße 6 · D-04827 Machern OT Gerichshain  
Tel. 03 42 92/8 63-0 · Fax 03 42 92/8 63-22  
Ust.ID-Nr. DE 812651762  
blochemagr@blochemagr.de  
[www.blochemagr.de](http://www.blochemagr.de)



### ANALYTICAL PHASE PLAN

**Buprofezin technical - Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)**

**Verification of the concentration of the active ingredient in the final diets**

#### Guidelines

SANCO/3029/99 rev. 4 (11/07/2000)

#### Test item

Buprofezin technical

#### Project Identification

BioChem project No.: 18 48 BLC 0021

BioChem project No. (analytical phase): 19 35 CRB 0002

#### Sponsor

Nihon Nohyaku Co., Ltd.  
Kyobashi OM Bldg.  
19-8, Kyobashi 1-Chome, Chuo-Ku  
Tokyo 104-8366  
Japan

#### Study Monitor

Junko Ikuta  
Nihon Nohyaku Co., Ltd.

#### Test Site (analytical phase)

BioChem agrar  
Labor für biologische und chemische Analytik GmbH  
Kupferstraße 6  
04827 Machern OT Gerichshain, Germany

#### Study Director

Kathrin Scheiler  
(address see Test Site)

#### Principal Investigator (analytical phase)

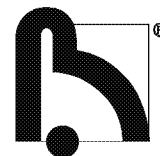
Anita Birke  
(address see Test Site)

#### Quality Assurance Manager (analytical phase)

Peggy Landsmann  
(address see Test Site)

#### Test Site Management

Gernot Renner  
(address see Test Site)



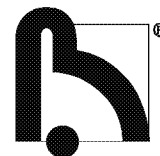
## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021, BioChem Project No. (analytical phase): 19 35 CRB 0002  
 Repeated exposure to honeybee larvae to Buprofezin technical  
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## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021, BioChem Project No. (analytical phase): 19.35 CRB 0002  
Repeated exposure to honeybee larvae to Buprofezin technical  
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### 1 General study information

#### 1.1 Objective

The purpose of the analytical phase of the study is the verification of concentrations of buprofezin in the final diets. The determination will be conducted by an in-house developed method using high performance liquid chromatography (HPLC) with mass-spectrometric (MS-MS) detection. Sample preparation will be based on the QuEChERS approach. The exact details of the method will be reported.

The analytical method will be validated according to SANCO/3029/99 rev.4.

#### 1.2 Guidelines

The analytical phase of the study will be performed according to the following guidelines:  
- SANCO/3029/99 rev. 4

#### 1.3 Expected time schedule (analytical phase)

Experimental Start: November 2018  
Experimental Completion: December 2018

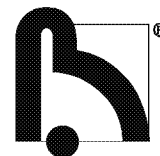
### 2 Specimen identification, treatment and measurement

The identification of the specimens, nominal test item application rates and sampling procedures are described in the study plan and are the responsibility of the study director.

Retain specimens will be taken during the biological part of the study for all specimens. If retain specimens have to be analysed the appropriate specimen identification will be reported.

The specimens will be stored under deep-frozen conditions. They will be thawed, homogenized by shaking and if necessary acidified and/or diluted.

The specimens of the biological part of the study as well as the validation samples will undergo a QuEChERS extraction prior to sample measurement. Therefore 5 mL of water and 5 mL of acetonitrile (if necessary acidified with 1% formic acid) as well as QuEChERS salt mix containing 0.5 g magnesium sulfate, 0.12 g sodium chloride, 0.06 g sodium hydrogencitrate sesquihydrate and 0.12 g of sodium citrate will be added to a sample aliquot (approx. 0.5 g). It will be shaken vigorously for 3 minutes and centrifuged. Aliquots of the acetonitrile-phase will be diluted if necessary and injected into the HPLC. Amounts of sample, solvents and salt mix might be adopted depending on analyte concentration in the feeding solutions. Details will be reported in the analytical phase report.



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021, BioChem Project No. (analytical phase): 19.35 CRB 0002  
Repeated exposure to honeybee larvae to Buprofezin technical  
Page 4 of 8



### 3 Materials and methods

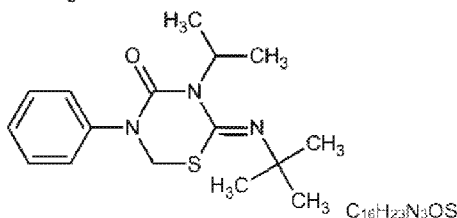
#### 3.1 Test item

Details of the test item Buprofezin technical (Batch No: 6AD0025Z) are described in the study plan.

#### 3.2 Analytical reference item

The analytical reference item and all data concerning the identification and description of its characteristics were provided by the Sponsor (unless otherwise stated). The Sponsor is responsible for the correct analytical reference item specification and identity. The characterization was carried out by the Sponsor.

Name: Buprofezin Standard  
BioChem storage No.: 2018/0067  
IUPAC name: (Z)-2-tert-butylimino-3-isopropyl-5-phenyl-1,3,5-thiadiazinan-4-one  
Batch/Lot No.: 5AD0024Z  
CAS-No.: 69327-76-0  
Molar mass: 305.44 g/mol  
Chemical formula:



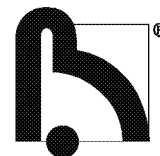
Date of receipt: 13 Mar 2018  
Expiration date: 31 May 2021  
Analysed purity: 99.5 %  
Storage conditions: Recommended: Store in refrigerator and dark condition  
Actual storage condition is  $\leq -10$  °C and dark (according to SANTE/11813/2017)  
Further details: Certificate of Analysis issued on 22 May 2015  
Safety data sheet of 06 Jan 2016

#### 3.3 Chromatographic system and parameters

All procedures regarding the analytical phase of the study will be carried out with standard laboratory equipment and chemicals. An in-house developed HPLC-method with mass-spectrometric (MS/MS) detection will be used for analysis of the test solutions of the biological test. The method will be validated according to SANCO/3029/99 rev.4.

An Agilent 1200 HPLC system with a 6460 triple quadrupole mass spectrometric detector will be used. Depending on instrument availability, a similar system might be used instead.

LC-Instrument	Manufacturer	Model
Binary pump	Agilent	G1312B
Degaser	Agilent	G4225A
Autosampler	Agilent	G1367E
Column compartment	Agilent	G1316A
MS detector	Agilent	G6460A
ESI ion source	Agilent	Jet stream
Data System	Agilent MassHunter	Data Acquisition for Triple Quad Version B.06.00



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021; BioChem Project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure to honeybee larvae to Buprofezin technical  
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The following tentative HPLC parameters were determined in previous experiments. They may be modified if necessary to increase analytical performance. Complete information will be given in the analytical phase report.

Parameter	Characteristics
Mobile phase	A: Water containing 0.1% formic acid and 5 mM ammonium formate B: Methanol containing 0.1% formic acid
Flow rate	0.35 mL/min
Gradient	0.00 min 30 % B 4.00 min 100 % B 8.00 min 100 % B Post time 3.00 min
Column	ACE Excel 3 C18, 2.1 x 100 mm, 3 µm
Detection	ESI positive, MRM: m/z 306 → 201; 306 → 106
Retention time	5.8 min

### 3.4 Calibration

An external matrix matched calibration with the analytical reference item will be performed from at least 80 % of the lowest validation concentration to at least 20 % above the highest validation concentration, taking into account possible sample dilution. Preparation and exact concentrations of the calibration standards will be reported.

A stock solution of the analytical reference item will be prepared by weighing the analytical reference item into a measuring flask and dissolving it in an appropriate dilution medium. At least five calibration solutions will be prepared from a dilution of the stock solution.

An appropriate calibration function will be calculated and used between the lowest and highest calibrated levels. The calibration curve (which may or may not appear to be linear) will, in general, not be forced through the origin. The fit of the calibration function will be plotted and inspected visually and/or by calculation of the residuals, avoiding unjustified reliance on the coefficients of determination ( $r^2$ ), to ensure that the fit is satisfactory.

### 3.5 Validation of the analytical method according to SANCO/3029/99

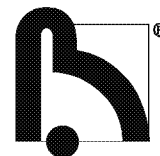
Method validation is performed with regard to accuracy, precision, LOQ, linearity, interference and specificity.

Method validation will be performed at approximately 50% of the lowest test concentration and at approximately 120% of the highest test concentration.

Five samples of each concentration are prepared by spiking sample matrix (prepared in the biological phase) with a solution of the test item. The solution of the test item will be prepared by weighing the test item into a measuring flask and dissolving it in an appropriate dilution medium. The solution will be diluted if necessary.

Two control samples are prepared without the addition of analyte. Additionally a reagent blank sample will be analysed.

Validation samples are treated in the same way as the test solution specimens.



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021, BioChem Project No. (analytical phase): 19 35 CRB 0002  
 Repeated exposure to honeybee larvae to Buprofezin technical  
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The method is considered to be valid if the following criteria are fulfilled:

Accuracy:	Mean recoveries for each validation level shall be in the range 70-110 %, ideally with the mean in the range 80-100 %
Precision:	Precision is reported as the relative standard deviation (RSD) at each fortification level; the RSD should be < 20 % per level (a maximum of 1 outlier may be discarded at each fortification level).
Limit of quantification (LOQ):	The LOQ is defined in the context of this study as the lowest successfully validated concentration.
Linearity:	The calibration should ideally show a linear dependency of the detector signal from analyte concentration.
Interference:	The method is validated with sample matrix using the test item; thereby the validity of the method under the influence of the sample matrix is confirmed, if the accuracy conforms to the mentioned criteria and the blank values do not exceed 30 % of the lowest validated concentration.
Specificity:	Triple quadrupole mass spectrometric determination in MRM-mode with at least two transitions is considered specific..

### 3.6 Calculation of the results

Chromatograms will be examined by the analyst and the baseline fitting checked and adjusted, as required. A consistent approach will be adopted for the positioning of the baseline. Peak height or peak area data may be used; whichever yields the more accurate and repeatable results. Calculation of the calibration function(s) and quantitation of the samples will be performed by the instrument software. The results will be exported to a Microsoft Excel sheet, where all further calculations are performed without intermediate rounding. To compensate for response variations of the mass-spectrometric detector, a bracketed recalibration will be used, i.e. standards are injected before and after a group of samples.

Standard deviations are calculated using the Excel function STDEV (STABW in the German version). The relative standard deviation (RSD) is calculated as  $RSD = STDEV / AVERAGE * 100 \%$ .

## 4 Distribution list

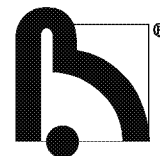
Analytical phase plan:	Study Director (original) Principal Investigator (analytical phase) (copy)
Analytical phase report:	Study Director (original + electronic copy) Principal Investigator (analytical phase) (copy)

## 5 Reporting

The results of the analytical phase will be reported in a detailed analytical phase report. The analytical phase report will include, but not be limited to, the following:

- Study number and study title
- Name and address of the Sponsor and the Test Site;
- The names of Study Director, Principal Investigator and other personnel involved in the analytical phase;
- Signatures of the Principal Investigator and Test Site Management;
- Initiation and completion dates of the analytical phase, as well as experimental phase initiation and completion dates;
- Test guidelines concerning the analytical phase;
- Objectives and procedures;
- Quality Assurance Statement listing the phases inspected and inspection dates, signed by the QA Unit Representative;
- Good Laboratory Practice Compliance Statement in accordance with OECD Principles of Good Laboratory Practice (GLP);
- Complete identification of the analytical reference item(s) identified by names, batch numbers, characteristics (purity, etc.), and a copy of the certificates of analysis of the analytical reference item(s);
- A detailed description of methods and materials used in the course of the analytical phase;





## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021, BioChem Project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure to honeybee larvae to Buprofezin technical  
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- A summary of the relevant results;
- The complete results in tabular form;
- A description of the equations used in performing the calculations;
- Calibration curves the calibration equation and the correlation coefficients ( $r^2$ ) and typical chromatograms, i.e. at least one chromatogram of
  - a low and high calibration solution,
  - a validation blank sample
  - a validation solution high and low concentration,
  - an untreated control,
  - a sample solution;
- The storage location of all raw data of the analytical phase, copies of study plan (including amendments) and analytical phase report.

### 6 Archiving

Study documents (regarding the analytical phase) will be archived according to the Principles of Good Laboratory Practice in the GLP-archives of BioChem agrar GmbH for the periods demanded by the national GLP regulations. This includes, but is not limited to:

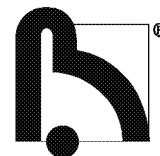
- A copy of the study plan (including amendments),
- The original raw data of the analytical phase,
- Correspondence (if relevant for the analytical phase),
- A copy of the analytical phase report,
- All documentation generated by the Quality Assurance Unit (to be archived by the Quality Assurance Unit, separate from study records),
- Laboratory-specific or site-specific raw data such as personnel files, instruments, equipment, refrigerator, and/or freezer raw data,
- Specifications of the staff qualification and education.

### 7 References

EUROPEAN COMMISSION, Directorate General Health and Consumer Protection /SANCO/3029/99 rev. 4,

Residues: Guidance for generating and reporting methods of analysis in support of pre-registration data requirements for Annex II (part A, Section 4) and Annex III (part A, Section 5) of Directive 91/414, 11/07/2000.

EUROPEAN COMMISSION, Directorate-General for Health and Food Safety/SANTE/11813/2017 rev. 0: Guidance document on analytical quality control and method validation procedures for pesticides residues analysis in food and feed, Supersedes SANTE/11945/2015, Implemented by 01/01/2018.



## Appendix 14 (continued): Study plan (including amendment(s) to the study plan)

Analytical phase plan to study 18 48 BLC 0021, BioChem Project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure to honeybee larvae to Buprofezin technical  
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### Confirmation of the analytical phase plan

Principal Investigator:  
(analytical phase)

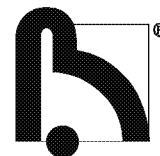
*Anita Birke* 23.11.2018  
Anita Birke Date

Quality Assurance Manager:  
(analytical phase)

*Peggy Landsmann* 23.11.2018  
for Peggy Landsmann Date  
Marcus Hempel

Test Site Management:  
(analytical phase)

*Gernot Renner* 23.11.2018  
Gernot Renner Date



## Appendix 15: Analytical phase report

Kupferstraße 6 · D-04827 Machern OT Gerichshain  
Tel. 03 42 92/8 63-0 · Fax 03 42 92/8 63-22

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**BioChem  
agr**  
Labor für biologische und  
chemische Analytik GmbH

### ANALYTICAL PHASE REPORT

**Buprofezin technical - Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)**

#### ***Determination of the concentration of the active ingredient in final diets***

##### Guideline

SANCO/3029/99 rev. 4 (11/07/2000)

##### Test item

Buprofezin technical

##### Project Identification

BioChem project No.: 18 48 BLC 0021

BioChem project No. (analytical phase): 19 35 CRB 0002

##### Sponsor

Nihon Nohyaku Co., Ltd.  
Kyobashi OM Bldg.,  
19-8, Kyobashi 1-Chome, Chuo-Ku  
Tokyo 104-8366  
Japan

##### Study Monitor

Junko Ikuta  
Nihon Nohyaku Co., Ltd.

##### Test Site (analytical phase)

BioChem agrar  
Labor für biologische und chemische Analytik GmbH  
Kupferstraße 6  
04827 Machern OT Gerichshain, Germany

##### Study Director

Kathrin Scheller (address see Test Site)

##### Principal Investigator (analytical phase)

Anita Birke (address see Test Site)

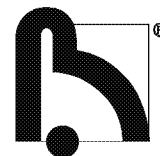
##### Quality Assurance Manager (analytical phase)

Peggy Landsmann (address see Test Site)

##### Test Site Management (analytical phase)

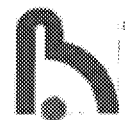
Gernot Renner (address see Test Site)

Analytical phase report completed on 24 Jan 2019



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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### Statement of Compliance with Good Laboratory Practice

Sponsor: Nihon Nohyaku Co., Ltd.

BioChem project No.: 19 35 CRB 0002  
(analytical phase)

BioChem project No.: 18 48 BLC 0021

Test item: Buprofezin technical

Study title: Buprofezin technical - Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)

Study Director: Kathrin Scheller

Principal Investigator: Anita Birke  
(analytical phase)


Completion date: 24 Jan 2019  
(analytical phase report)

The analytical phase of the study was performed in compliance with the Principles of Good Laboratory Practice (GLP), Annex 1 to Chemicals Act of Federal Republic of Germany in the current version [Grundsätze der Guten Laborpraxis (GLP), Anhang 1 zum Chemikaliengesetz der Bundesrepublik Deutschland in der aktuellen Fassung] based on the OECD Principles of Good Laboratory Practice as revised in 1997 and adopted November 26<sup>th</sup>, 1997 by decision of the OECD Council [C(97)186/Final] and the Directive 2004/10/EC of 11 February 2004 amending Council Directive 87/18/EEC, which are accepted by regulatory authorities throughout the European Union, the United States of America (FDA and EPA) and Japan (MHLW, MAFF and METI) on the basis of intergovernmental agreements as well as with the OECD Consensus Document No. 13 (200).

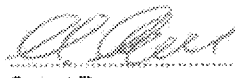
The analytical phase of the study was performed under the supervision of the Principal Investigator according to the procedures described herein. The analytical phase report provides an accurate record of the results obtained.

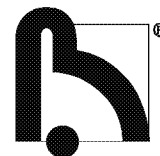
There were no circumstances that may have adversely affected the quality or integrity of the analytical phase of the study.

Principal Investigator (analytical phase):  
BioChem agrar GmbH  
04827 Machern OT Gerichshain, Germany

 24 Jan 2019  
Anita Birke Date

Test Site Management (analytical phase):  
BioChem agrar GmbH  
04827 Machern OT Gerichshain, Germany

 24 Jan 2019  
Gernot Renner Date  
Dr. Hendrik Horant



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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### Quality Assurance Statement

BioChem project No.: 19 35 CRB 0002  
(analytical phase)

BioChem project No.: 18 48 BLC 0021

Test item: Buprofezin technical

Study title: Buprofezin technical - Repeated exposure of honey bee larvae  
(*Apis mellifera* L.) under laboratory conditions (*in vitro*)

Study Director: Kathrin Scheller

Principal Investigator: Anita Birke  
(analytical phase)

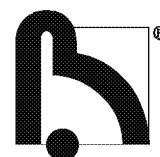
Procedures of the analytical phase of the study were periodically inspected by the Quality Assurance Manager (analytical phase). The results are reported to the Principal Investigator (analytical phase), Study Director, Lead Quality Assurance Manager and the Test Site/Facility Management.

Inspections / audits	Dates of inspections / audits	Dates of report
Analytical phase plan	09 Nov 2018	09 Nov 2018
Experiments	27 Nov 2018	27 Nov 2018
Analytical phase report	20 Dec 2018	20 Dec 2018

So far as can be reasonably established, the methods described and results incorporated in this report accurately reflect the raw data produced during the analytical phase of the study.

Quality Assurance Manager:  
(analytical phase)  
BioChem agrar GmbH  
04827 Machern OT Gerichshain, Germany

  
for Peggy Landsmann  
Date 29 Jan 2019  
Marcus Hempel



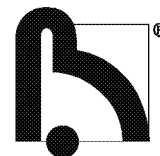
## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
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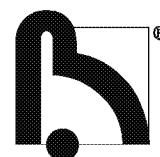
## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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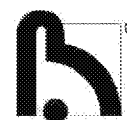
### Index of abbreviations

a.i.	Active ingredient
ASS	Aqueous sugar solution
Cal	Calibration solution
Conc.	Concentration
DF	Dilution factor
Dil	Dilution
HfO	Formic acid
Hom	Homogeneity
HPLC	High performance liquid chromatography
LOQ	Limit of quantification (defined in the context of this study as the lowest successfully validated fortification level)
Min	Minutes
n.d.	Not detected or concentration below 30% of LOQ
p.a.	Pro analysis
Rcf	Recalibration factor
REC	Recovery
RSD	Relative standard deviation
SD	Standard Deviation
Sta	Stability
UV	Ultraviolet
Val high (Val H)	Validation high concentration
Val blank	Validation blank solution
Val low (Val L)	Validation low concentration



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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### Summary

The purpose of the analytical phase of the study was the verification of the concentration of Buprofezin in final diets of honey bee larvae. The determination was conducted by an in-house developed method using reversed phase - high performance liquid chromatography (RP-HPLC) with mass-spectrometric (MS-MS) detection.

The analytical method was validated according to SANCO/3029/99 rev. 4.

#### Validation summary of Buprofezin:

Validation	Repli- cates	Nominal conc. of a.i. [mg/kg]	Mean analysed conc. of a.i. [mg/kg]	Mean REC [% of nominal]	RSD [%]
Low concentration (LOQ)	5	3.184	2.902	91	3.2
High concentration	5	796.0	688.3	86	3.3
Untreated val. samples	2	0.000	<LOD	-	-

Validation blank samples had peak areas of less than 30% of the lowest validated concentration. No interfering peaks were detected.

The specificity of the method was assured by multiple reaction monitoring (MRM)-detection, constant retention time and the absence of interfering peaks.

The recovery and precision data show that the influences of test medium were within the limits of the guidance document SANCO/3029/99; all criteria were fulfilled:

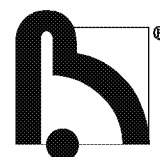
- blank values did not exceed 30% of the lowest validated concentration,
- mean recoveries for each level were in the range 70-110%,
- the RSD was < 20% per level.

The limit of quantification (LOQ) was defined in the context of this study as 3.184 mg/kg for Buprofezin which corresponds to 31.84 µg/L in diluted extracts.

#### Analysis results

Specimen	Nominal conc. of a.i. [mg/kg]	Nominal conc. of a.i. regarding DF [µg/L]	Measured conc. of a.i. [µg/L]	RCF	DF <sub>total</sub>	Analysed conc. of a.i. [mg/kg]	Recovery [%]
18BLC0021-D3-BC-A	0.000	0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D4-BC-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D5-BC-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D6-BC-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D3-BC-24hr-A	0.000	0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D4-BC-24hr-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D5-BC-24hr-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D6-BC-24hr-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D3-ET-A	6.338	63.38	54.72	0.9893	100	5.413	85
18BLC0021-D4-ET-A		63.38	58.16	0.9893	100	5.754	91
18BLC0021-D5-ET-A		63.38	58.93	0.9893	100	5.830	92
18BLC0021-D6-ET-A		63.38	42.85	0.9893	100	4.239	67
18BLC0021-D6-ET-R		63.38	58.71	0.9774	100	5.738 (4.989)	91 (79)



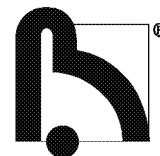


## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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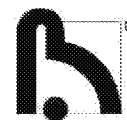


Specimen	Nominal conc. of a.i. [mg/kg]	Nominal conc. of a.i. regarding DF [ $\mu\text{g/L}$ ]	Measured conc. of a.i. [ $\mu\text{g/L}$ ]	RCF	DF <sub>1-dst</sub>	Analysed conc. of a.i. [mg/kg]	Recovery [%]
18BLC0021-D3-ET-24hr-A	6.338	63.38	53.33	0.9889	100	5.273	83
18BLC0021-D4-ET-24hr-A		63.38	52.66	0.9889	100	5.208	82
18BLC0021-D5-ET-24hr-A		63.38	52.76	0.9889	100	5.217	82
18BLC0021-D6-ET-24hr-A		63.38	56.44	0.9889	100	5.581	88
18BLC0021-D3-DT-A	63.38	63.38	56.50	0.9843	1000	55.61	88
18BLC0021-D4-DT-A		63.38	58.41	0.9843	1000	57.48	91
18BLC0021-D5-DT-A		63.38	59.32	0.9843	1000	58.38	92
18BLC0021-D6-DT-A		63.38	63.67	0.9843	1000	62.66	99
18BLC0021-D3-DT-24hr-A	63.38	63.38	54.85	0.9785	1000	53.67	85
18BLC0021-D4-DT-24hr-A		63.38	56.39	0.9785	1000	55.17	87
18BLC0021-D5-DT-24hr-A		63.38	32.38	0.9785	1000	31.69	50
18BLC0021-D5-DT-24hr-R		63.38	56.61	0.9774	1000	55.33 (43.51)	87 (69)
18BLC0021-D6-DT-24hr-A		63.38	56.40	0.9785	1000	55.19	87
18BLC0021-D3-CT-A	158.4	63.38	52.08	0.9810	2500	127.7	81
18BLC0021-D4-CT-A		63.38	57.98	0.9810	2500	142.2	90
18BLC0021-D5-CT-A		63.38	57.09	0.9810	2500	140.0	88
18BLC0021-D6-CT-A		63.38	19.25	0.9810	2500	47.22	30*
18BLC0021-D6-CT-R		63.38	36.84	0.9774	2500	90.02	57
18BLC0021-D3-CT-24hr-A	158.4	63.38	50.56	0.9718	2500	123	78
18BLC0021-D3-CT-24hr-R		63.38	49.04	0.9774	2500	119.6 (121.3)	76 (77)
18BLC0021-D4-CT-24hr-A		63.38	54.84	0.9718	2500	133	84
18BLC0021-D5-CT-24hr-A		63.38	53.90	0.9718	2500	131	83
18BLC0021-D6-CT-24hr-A		63.38	235.2	0.9718	2500	572	361*
18BLC0021-D6-CT-24hr-R		63.38	57.05	0.9774	2500	139.4	88
18BLC0021-D3-BT-A	316.9	63.38	41.72	0.9717	5000	202.7	64
18BLC0021-D3-BT-R		63.38	40.49	0.7114	5000	144.0 (173.4)	45 (55)
18BLC0021-D4-BT-A		63.38	50.13	0.9717	5000	243.6	77
18BLC0021-D4-BT-R		63.38	48.33	0.7114	5000	171.9 (207.7)	54 (66)
18BLC0021-D5-BT-A		63.38	49.08	0.9717	5000	238.5	75
18BLC0021-D5-BT-R		63.38	43.81	0.7114	5000	155.8 (197.1)	49 (62)
18BLC0021-D6-BT-A		63.38	30.03	0.9717	5000	145.9	46
18BLC0021-D6-BT-R		63.38	44.84	0.7114	5000	159.5 (152.7)	50 (48)
18BLC0021-D3-BT-24hr-A	316.9	63.38	41.46	0.9757	5000	202.3	64
18BLC0021-D3-BT-24hr-R		63.38	44.00	0.9812	5000	215.9 (209.1)	66 (66)
18BLC0021-D4-BT-24hr-A		63.38	45.74	0.9757	5000	223.1	70
18BLC0021-D4-BT-24hr-R		63.38	48.17	0.9812	5000	236.4 (229.7)	75 (72)
18BLC0021-D5-BT-24hr-A		63.38	45.95	0.9757	5000	224.2	71
18BLC0021-D5-BT-24hr-R		63.38	46.67	0.9812	5000	229.0 (226.6)	72 (71)
18BLC0021-D6-BT-24hr-A		63.38	51.14	0.9757	5000	249.5	79
18BLC0021-D6-BT-24hr-R		63.38	38.37	0.9812	5000	188.3 (218.9)	59 (69)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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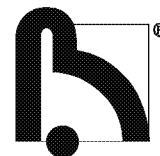
Specimen	Nominal conc. of a.i. [mg/kg]	Nominal conc. of a.i. regarding DF [ $\mu\text{g/L}$ ]	Measured conc. of a.i. [ $\mu\text{g/L}$ ]	RCF	DF <sub>total</sub>	Analysed conc. of a.i. [mg/kg]	Recovery [%]
18BLC0021-D3-AT-A	633.8	63.38	34.93	0.9756	10000	340.8	54
18BLC0021-D3-AT-R		63.38	37.30	0.9824	10000	366.4 (353.6)	58 (56)
18BLC0021-D4-AT-A		63.38	35.17	0.9756	10000	343.1	54
18BLC0021-D4-AT-R		63.38	33.77	0.9824	10000	331.8 (337.5)	52 (53)
18BLC0021-D5-AT-A		63.38	40.00	0.9756	10000	390.2	62
18BLC0021-D5-AT-R		63.38	37.54	0.9824	10000	368.8 (379.5)	58 (60)
18BLC0021-D6-AT-A		63.38	43.90	0.9756	10000	428.3	68
18BLC0021-D6-AT-R		63.38	43.67	0.9824	10000	429.0 (428.7)	68 (68)
18BLC0021-D3-AT-24hr-A	633.8	63.38	36.75	0.9793	10000	359.9	57
18BLC0021-D3-AT-24hr-R		63.38	36.28	0.9881	10000	358.5 (359.2)	57 (57)
18BLC0021-D4-AT-24hr-A		63.38	33.09	0.9793	10000	324.1	51
18BLC0021-D4-AT-24hr-R		63.38	30.39	0.9881	10000	300.3 (312.2)	47 (49)
18BLC0021-D5-AT-24hr-A		63.38	40.10	0.9793	10000	392.7	62
18BLC0021-D5-AT-24hr-R		63.38	36.75	0.9881	10000	363.1 (377.9)	57 (60)
18BLC0021-D6-AT-24hr-A		63.38	0.000	0.9793	10000	0.000	< LOD *
18BLC0021-D6-AT-24hr-R		63.38	39.37	0.9881	10000	389.0	61

LOQ: 3.184 mg/kg, corresponding to 31.84  $\mu\text{g/L}$

\*the value was not included in the calculation of the mean analysed conc. and mean recovery, since it was out of the calibration range

Values in brackets are mean values of sample for analysis and retain sample

The recoveries for Buprofezin were between 45 and 99% in the final diets. In the control specimens, the concentrations of the active ingredient were below 30% of LOQ.



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
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### 1 General information

#### 1.1 Objective

The purpose of the analytical phase of the study was the verification of the concentration of Buprofezin in final diets of honey bee larvae. The determination was conducted by an in-house developed method using reversed phase - high performance liquid chromatography (RP-HPLC) with mass-spectrometric (MS-MS) detection.

The analytical method was validated according to SANCO/3029/99 rev. 4.

#### 1.2 Project staff

Principal Investigator:	Anita Birke
Personnel:	Andreas Stein

#### 1.3 Time schedule (analytical phase)

Experimental start date:	27 Nov 2018
Experimental completion date:	30 Nov 2018
Completion date (Analytical phase report):	24 Jan 2019

#### 1.4 Guidelines

Reference to the test guidelines or methods used:

- SANCO/3029/99 rev. 4 (method validation)

#### 1.5 Archiving

Study documents (regarding the analytical phase) will be archived according to the Principles of Good Laboratory Practice in the GLP-archives of BioChem agrar GmbH for the periods demanded by the national GLP regulations. This includes, but is not limited to:

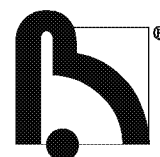
- A copy of the study plan (including amendments),
- The original raw data of the analytical phase,
- Correspondence (if relevant for the analytical phase),
- A copy of the analytical phase report,
- All documentation generated by the Quality Assurance Unit (to be archived by the Quality Assurance Unit, separate from study records),
- Laboratory-specific or site-specific raw data such as personnel files, instruments, equipment, refrigerator, and/or freezer raw data,
- Specifications of the staff qualification and education.

### 2 Distribution list

Analytical phase report:	Study Director (original + electronic copy)
	Principal Investigator (electronic copy)

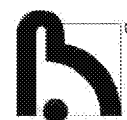
### 3 Test item

The test item was Buprofezin technical.



## Appendix 15 (continued): Analytical phase report

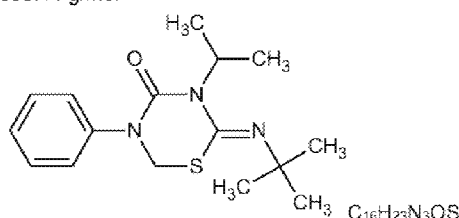
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### 4 Analytical reference item

The analytical reference item Buprofezin and all data concerning the identification and description of its characteristics were provided by the Sponsor. The Sponsor is responsible for correct analytical reference item specification and identity.

Name: Buprofezin Standard  
BioChem storage No.: 2018/0067  
IUPAC name: (Z)-2-tert-butylimino-3-isopropyl-5-phenyl-1,3,5-thiadiazinan-4-one  
Batch/Lot No.: 5AD0024Z  
CAS-No.: 69327-76-0  
Molar mass: 305.44 g/mol  
Chemical formula:



Date of receipt: 13 Mar 2018  
Expiration date: 31 May 2021  
Analysed purity: 99.5 %  
Storage conditions: Recommended: Store in refrigerator and dark condition  
Actual storage condition is  $\leq -10$  °C and dark (according to SANTE/11813/2017)  
Further details: Certificate of Analysis issued on 22 May 2015  
Safety data sheet of 06 Jan 2016

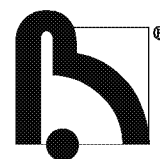
### 5 Specimen information

The specimens for analysis were received deep frozen on 27 Nov 2018. The retain specimens were received deep frozen on 28 Nov 2018. They were stored at  $\leq -18$  °C until preparation and analysis on 27/28 Nov 2018.

The analysed specimens had the following identification:

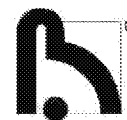
Specimen identification (final diets):

Specimen identification		Sampling time	Matrix	Specimen description
Analysis sample	Retain sample			
18BLC0021-D3-BC-A	18BLC0021-D3-BC-R	D3	Final diet	Solvent control
18BLC0021-D3-AT-A	18BLC0021-D3-AT-R	D3	Final diet	AT
18BLC0021-D3-BT-A	18BLC0021-D3-BT-R	D3	Final diet	BT
18BLC0021-D3-CT-A	18BLC0021-D3-CT-R	D3	Final diet	CT
18BLC0021-D3-DT-A	18BLC0021-D3-DT-R	D3	Final diet	DT
18BLC0021-D3-ET-A	18BLC0021-D3-ET-R	D3	Final diet	ET
18BLC0021-D4-BC-A	18BLC0021-D4-BC-R	D4	Final diet	Solvent control
18BLC0021-D4-AT-A	18BLC0021-D4-AT-R	D4	Final diet	AT
18BLC0021-D4-BT-A	18BLC0021-D4-BT-R	D4	Final diet	BT
18BLC0021-D4-CT-A	18BLC0021-D4-CT-R	D4	Final diet	CT
18BLC0021-D4-DT-A	18BLC0021-D4-DT-R	D4	Final diet	DT
18BLC0021-D4-ET-A	18BLC0021-D4-ET-R	D4	Final diet	ET



## Appendix 15 (continued): Analytical phase report

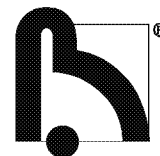
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Specimen identification		Sampling time	Matrix	Specimen description
Specimen identification	Specimen identification			
18BLC0021-D5-BC-A	18BLC0021-D5-BC-R	D5	Final diet	Solvent control
18BLC0021-D5-AT-A	18BLC0021-D5-AT-R	D5	Final diet	AT
18BLC0021-D5-BT-A	18BLC0021-D5-BT-R	D5	Final diet	BT
18BLC0021-D5-CT-A	18BLC0021-D5-CT-R	D5	Final diet	CT
18BLC0021-D5-DT-A	18BLC0021-D5-DT-R	D5	Final diet	DT
18BLC0021-D5-ET-A	18BLC0021-D5-ET-R	D5	Final diet	ET
18BLC0021-D6-BC-A	18BLC0021-D6-BC-R	D6	Final diet	Solvent control
18BLC0021-D6-AT-A	18BLC0021-D6-AT-R	D6	Final diet	AT
18BLC0021-D6-BT-A	18BLC0021-D6-BT-R	D6	Final diet	BT
18BLC0021-D6-CT-A	18BLC0021-D6-CT-R	D6	Final diet	CT
18BLC0021-D6-DT-A	18BLC0021-D6-DT-R	D6	Final diet	DT
18BLC0021-D6-ET-A	18BLC0021-D6-ET-R	D6	Final diet	ET

Specimen identification (24hrs stability samples under exposure conditions):

Specimen identification		Sampling time	Matrix	Specimen description
Analysis sample	Retain sample			
18BLC0021-D3-BC-24hr-A	18BLC0021-D3-BC-24hr-R	D4	Final diet	Solvent control
18BLC0021-D3-AT-24hr-A	18BLC0021-D3-AT-24hr-R	D4	Final diet	AT
18BLC0021-D3-BT-24hr-A	18BLC0021-D3-BT-24hr-R	D4	Final diet	BT
18BLC0021-D3-CT-24hr-A	18BLC0021-D3-CT-24hr-R	D4	Final diet	CT
18BLC0021-D3-DT-24hr-A	18BLC0021-D3-DT-24hr-R	D4	Final diet	DT
18BLC0021-D3-ET-24hr-A	18BLC0021-D3-ET-24hr-R	D4	Final diet	ET
18BLC0021-D4-BC-24hr-A	18BLC0021-D4-BC-24hr-R	D5	Final diet	Solvent control
18BLC0021-D4-AT-24hr-A	18BLC0021-D4-AT-24hr-R	D5	Final diet	AT
18BLC0021-D4-BT-24hr-A	18BLC0021-D4-BT-24hr-R	D5	Final diet	BT
18BLC0021-D4-CT-24hr-A	18BLC0021-D4-CT-24hr-R	D5	Final diet	CT
18BLC0021-D4-DT-24hr-A	18BLC0021-D4-DT-24hr-R	D5	Final diet	DT
18BLC0021-D4-ET-24hr-A	18BLC0021-D4-ET-24hr-R	D5	Final diet	ET
18BLC0021-D5-BC-24hr-A	18BLC0021-D5-BC-24hr-R	D6	Final diet	Solvent control
18BLC0021-D5-AT-24hr-A	18BLC0021-D5-AT-24hr-R	D6	Final diet	AT
18BLC0021-D5-BT-24hr-A	18BLC0021-D5-BT-24hr-R	D6	Final diet	BT
18BLC0021-D5-CT-24hr-A	18BLC0021-D5-CT-24hr-R	D6	Final diet	CT
18BLC0021-D5-DT-24hr-A	18BLC0021-D5-DT-24hr-R	D6	Final diet	DT
18BLC0021-D5-ET-24hr-A	18BLC0021-D5-ET-24hr-R	D6	Final diet	ET
18BLC0021-D6-BC-24hr-A	18BLC0021-D6-BC-24hr-R	D7	Final diet	Solvent control
18BLC0021-D6-AT-24hr-A	18BLC0021-D6-AT-24hr-R	D7	Final diet	AT
18BLC0021-D6-BT-24hr-A	18BLC0021-D6-BT-24hr-R	D7	Final diet	BT
18BLC0021-D6-CT-24hr-A	18BLC0021-D6-CT-24hr-R	D7	Final diet	CT
18BLC0021-D6-DT-24hr-A	18BLC0021-D6-DT-24hr-R	D7	Final diet	DT
18BLC0021-D6-ET-24hr-A	18BLC0021-D6-ET-24hr-R	D7	Final diet	ET



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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### 6 Materials

#### 6.1 General laboratory equipment

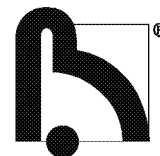
<i>Apparatus</i>	<i>Manufacturer, Model</i>
Analytical balance (0.00001 g)	Mettler Toledo, Model XP205 DR4, Ser.No.: 1128072705
Precision balance (0.01 g)	Mettler Toledo, Model MS30025/01, Ser.No.: 823219441
Electronic dispenser	Brand HandyStep® electronic, Ser.No.: O3M72583
Laboratory glassware	diverse
Ultra-pure water unit	Milli-Q Advantage A10, Ser.No.: FOBA82448D
Ultrasonic bath	Elmasonic P 70 H, Ser.No.: 189396070
Freezer	Arkis Grimma; IKA ZELL, Ser.No.: 13 61
Centrifuge	Eppendorf, Centrifuge 5804 R; Ser. No. 58 05ZM136988
Transferpette 2-20 µL	Brand, Ser.No.: 16C44506
Transferpette 10-200 µL	Brand, Ser.No.: 10N72423
Transferpette 100-1000 µL	Brand, Ser.No.: 11N81571
Multitube Vortex mixer	VWR, 150713001
Refrigerator	Liebherr profiline, Ser.No.: 74.813.166.0

#### 6.2 Expendable items

<i>Material</i>	<i>Type/Properties/Size</i>
Pipette Tips	Brand PD-Tips (different volumes)
Pasteur pipettes	230 mm – Volac Ref. D812
Volumetric flasks	glass, different sizes
Screw cap with septum	Polypropylene, Rubber/FEP septum, Macherey-Nagel
Sample vial	1.5 mL N9, Macherey-Nagel

#### 6.3 Chemicals

<i>Chemical</i>	<i>Supplier</i>	<i>Quality</i>	<i>Art. No.</i>
Water	---	Ultra pure	produced in house with Milli-Q Advantage A10
Acetonitrile	VWR	for HPLC super gradient grade	83639.320
Methanol	VWR	LC-MS grade	83638.320
Acetic acid	VWR	UHPLC-MS Optigrade	SO-9679-B001
Disodium hydrogen citrate 6xH <sub>2</sub> O	Merck		S623364109
Trisodium citrate 2xH <sub>2</sub> O	Roth	p.a.	310158810
Sodium chloride	Merck	p.a.	K4187510410
Magnesium sulfate	Sigma-Aldrich	p.a.	BCBB4635
Formic acid	Promochem	ULC7MS Optigrade	SO-9679-B001



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
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### 6.4 HPLC system and mass spectrometer

An Agilent 1200 HPLC system with a 6410 triple quadrupole mass spectrometric detector was used.

LC-Instrument	Manufacturer	Model
Binary pump	Agilent	G1312B
Degaser	Agilent	G4225A
Autosampler	Agilent	G1367E
Column compartment	Agilent	G1316A
MS detector	Agilent	G6460A
ESI ion source	Agilent	Jet stream
Data System	Agilent MassHunter	Data Acquisition for Triple Quad Version B.06.00

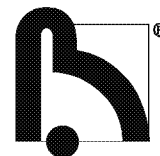
The following HPLC parameters were used for analysis of the samples:

Column	ACE Excel 3 C18, 2.1 x 100 mm, 3 µm
Column temperature	35 °C
Mobile phase	A: Water containing 0.1% formic acid and 5 mM ammonium formate B: Methanol containing 0.1% formic acid
Gradient	0.00 min 30 % B 4.00 min 100 % B 8.00 min 100 % B Post time 3.00 min
Injection volume	5 µL
Flow rate	0.350 mL/min
Detection	Retention time 5.5 min ESI positive, MRM: m/z 306 → 201; 306 → 106

## 7 Experimental procedures

### 7.1 Preparation of solutions

Solution	Preparation
LC eluent A	1 mL formic acid and 315 mg ammonium formate were added to 1 L of ultrapure water
LC eluent B	1 mL formic acid was added to 1 L of methanol
Dilution medium	5/45/50 (v/v) (Blank extract*/acetonitrile/water) * Blank extract was obtained by extracting untreated sample matrix as described in chapter 7.2
Sample matrix	50/50 (w/w) Royal jelly/ASS containing 18% (w/w) glucose, 18% (w/w) fructose, 4% (w/w) yeast extract



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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### Calibration solutions

REF2018/0067 10.00 mg of the analytical reference item (99.5%) Buprofezin were weighed into a 10 mL measuring flask and filled to the mark with acetonitrile (concentration of Buprofezin: 995.0 mg/L)

REF2018/0067-Dil 1 0.100 mL of REF2018/0067 were pipetted into a 10 mL flask and filled to the mark with dilution medium (concentration of Buprofezin: 9.95 mg/L)

REF2018/0067-Dil 2 0.110 mL of REF2018/0067-Dil 1 were pipetted into a 10 mL flask and filled to the mark with dilution medium (concentration of Buprofezin: 0.1095 mg/L)

Calibration solutions The following volumes were mixed in autosampler vials:

Calibration solution	Volume [mL]	Original solution	Diluted with [mL]	Conc. of a.i. [µg/L]
19CRB0002-Cal 1	0.100	REF2018/0067-Dil 2	0.900	10.95
19CRB0002-Cal 2	0.250		0.750	27.36
19CRB0002-Cal 3	0.400		0.600	43.78
19CRB0002-Cal 4	0.550		0.450	60.20
19CRB0002-Cal 5	0.700		0.300	76.62
19CRB0002-Cal 6	0.850		0.150	93.03
19CRB0002-Cal 7	1.000		0.000	109.5

### Validation solutions

Validation solutions The test item Buprofezin technical (99.5%) was used for validation of the method.

19CRB0002-Val stock 160.0 mg of Buprofezin technical were weighed into a 2 mL flask and filled to volume with acetone (concentration of Buprofezin: 79600 mg/L)

19CRB0002-Val st-Dil 1 0.040 mL of 19CRB0002-Val stock were pipetted into a 10 mL flask and filled to the mark with acetone (concentration of Buprofezin: 318.4 mg/L)

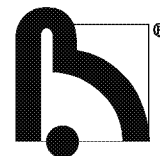
### Validation dilutions

Validation solution	Volume [mL]	Original solution	added to [g] of sample matrix	Conc. of a.i. [mg/kg]	Conc. of a.i. after extraction [mg/L]	Number of Replicates
19CRB0002-Val H Dil 1	0.005	19CRB0002-Val stock	0.50	796.0	159.2	5
19CRB0002-Val L Dil 1	0.005	19CRB0002-Val st-Dil 1	0.50	3.184	0.637	5
19CRB0002-Val Blank	0.000	acetone	8.00	0.000	0.000	2

### Validation measuring solutions

The validation solutions were extracted as described in chapter 7.2 and diluted. The 19CRB0002-Val High samples were diluted from the extracts of the validation high samples (described in validation solutions) and the 19CRB0002-Val Low were diluted from the extracts of the validation low samples (described in validation solutions). The same procedure applies to the validation blank samples.





## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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Validation measuring  
solutions

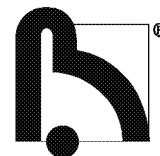
Specimen	Volume of sample extract [mL]	Add [mL] of Blank extract	Add [mL] of ACN	Fill up with H <sub>2</sub> O to [mL]	Conc. of a.i. [µg/L]	DF with dilution medium	Conc. of a.i. after dilution [µg/L]
19CRB0002 Val High	0.010	0.040	0.450	1.000	1592	20	79.60
19CRB0002 Val Low	0.050	0.000	0.450	1.000	31.84	1	31.84
19CRB0002 Val Blank	0.050	0.000	0.450	1.000	0.000	1	0.000

### 7.2 Preparation of samples

0.5 g aliquots of the final diet specimens of the biological part as well as the respective validation samples were weighed into 15 mL polypropylene tubes. For extraction, 5 mL of extraction medium (50/50 v/v acetonitrile/water) as well as a QuEChERS salt mixture were added. Samples were homogenized by shaking vigorously by use of a multitube vortex mixer for 3 minutes. Moreover, they were centrifuged at 3000 rpm for 2 minutes. The acetonitrile phase of each sample was diluted according to the following table:

*Dilution of sample extracts prior to sample analysis*

Specimen	Conc. of a.i. after extraction [mg/L]	Volume of sample extract [mL]	Add [mL] of blank extract	Add [mL] of acetonitrile	Fill up to [mL] with water	Conc. of a.i. [mg/L]	DF with dilution medium	Conc. of a.i. after dilution [µg/L]
18BLC0021-D3-AT to 18BLC0021-D6-AT, 18BLC0021-D3-AT-24hr to 18BLC0021-D6-AT-24hr	126.8	0.010	0.040	0.450	1.000	1.268	20	63.38
18BLC0021-D3-BT to 18BLC0021-D6-BT, 18BLC0021-D3-BT-24hr to 18BLC0021-D6-BT-24hr	63.38	0.010	0.040	0.450	1.000	0.634	10	63.38
18BLC0021-D3-CT to 18BLC0021-D6-CT, 18BLC0021-D3-CT-24hr to 18BLC0021-D6-CT-24hr	31.69	0.010	0.040	0.450	1.000	0.317	5	63.38
18BLC0021-D3-DT to 18BLC0021-D6-DT, 18BLC0021-D3-DT-24hr to 18BLC0021-D6-DT-24hr	12.68	0.005	0.045	0.450	1.000	0.0634	1	63.38
18BLC0021-D3-ET to 18BLC0021-D6-ET, 18BLC0021-D3-ET-24hr to 18BLC0021-D6-ET-24hr	1.268	0.050	0.000	0.450	1.000	0.0634	1	63.38
18BLC0021-D3-BC to 18BLC0021-D6-BC, 18BLC0021-D3-BC-24hr to 18BLC0021-D6-BC-24hr	0.000	0.050	0.000	0.000	1.000	0.000	1	0.000
19CRB0002 Val High	159.2	0.010	0.040	0.450	1.000	1.592	20	79.60
19CRB0002 Val Low	0.637	0.050	0.000	0.450	1.000	0.0318	1	31.84
19CRB0002 Val Blank	0.000	0.050	0.000	0.450	1.000	0.000	1	0.000



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
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### 7.3 Calibration

For Buprofezin a calibration with the analytical reference item was performed from 34% of the lowest validation measuring concentration to 138% of the highest validation measuring concentration (10.95 to 109.5 µg/L) on each measuring day. Matrix effects were taken into account by the addition of the internal standards as well as the addition of the same amount of blank extract to the analysis samples.

### 7.4 Validation of the analytical method according to SANCO/3029/99

The method was validated with test medium spiked with test item at 50% of the lowest applied test item concentration (3.184 mg/kg) and at approx. 126% of the highest applied test item concentration of Buprofezin (796.0 µg/kg).

### 7.5 Calculation of the results

The detector signals were registered and integrated using the data system. Calibration curves were calculated from peak areas by the software. Concentrations of the specimens were calculated from peak areas using the calibration curve.

Intermediate results were exported to a Microsoft Excel worksheet, where calculations of means, recoveries, and standard deviations (SD) were performed. All calculations were done without intermediate rounding; only the final results were rounded to a reasonable number of decimals.

To compensate for response variations of the MS detector, a bracketed recalibration was used, i.e. standards were injected before and after a group of samples. The concentrations calculated from the calibration curve were corrected with recalibration factors, calculated as:

$$Rcf = 2 \times C_{nominal} / (C_1 + C_2)$$

with	$Rcf$	recalibration factor
	$C_{nominal}$	nominal concentration of the standard
	$C_1$ and $C_2$	measured concentrations of the standards (run before and after the samples)

Final concentrations of the a.i. in stock solution validation samples and specimens were calculated as:

$$C_{analysed} = C_{meas} \times DF \times Rcf$$

with	$C_{analysed}$	final concentration of active ingredient
	$C_{meas}$	concentration of active ingredient calculated by the software using the calibration curve
	$DF$	Dilution factor
	$Rcf$	Recalibration factor

The total dilution factor was calculated as:

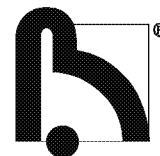
$$DF_{total} = DF_{extr} \times V_{ACN:H_2O} / W_{sample}$$

with	$DF_{total}$	total dilution factor of sample preparation and dilution [mL/g]
	$DF_{extr}$	dilution factor of sample extract [1 / Blank extract contained in calibration samples [%] ]
	$V_{ACN:H_2O}$	Volume of acetonitrile/water for sample extraction
	$W_{sample}$	Weight of sample for extraction [g]

Final concentrations of the a.i. in final diet validation samples and specimens were calculated as:

$$C_{analysed} = DF_{total} \times Rcf \times C_{meas} / 1000$$

with	$C_{analysed}$	final concentration of active ingredient [mg/kg]
	$DF_{total}$	total dilution factor of sample preparation and dilution [mL/g]
	$Rcf$	recalibration factor
	$C_{meas}$	concentration of active ingredient calculated by the software using the calibration curve [µg/L]



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
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1000                      total conversion factor [ $\mu\text{g} \rightarrow \text{g}$  and  $\text{g} \rightarrow \text{kg}$ ]

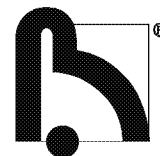
Recoveries were calculated as:

$$REC = (C_{\text{analysed}} / C_{\text{nominal}}) \times 100\%$$

with	<i>REC</i>	recovery
	$C_{\text{nominal}}$	nominal concentration of a.i. in the specimens
	$C_{\text{analysed}}$	analysed concentration of a.i. in the specimens

Standard deviations were calculated using the Excel function STDEV (STABW in the German version).

The relative standard deviation (RSD) was calculated as:  $RSD = STDEV / MEAN \times 100\%$ .



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
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### 8 Results

#### 8.1 Calibration

The calibration function for Buprofezin was linear in the range of 10.95 to 109.5 µg/L of Buprofezin for all measuring days. 1/x weighing was applied and a correlation coefficient of > 0.99 was obtained.

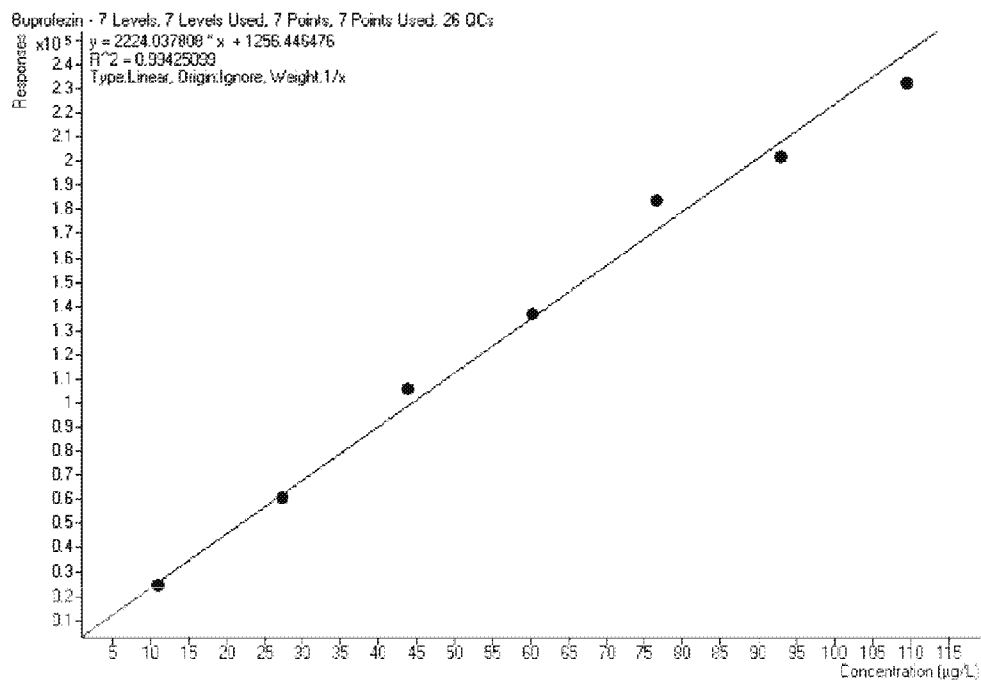
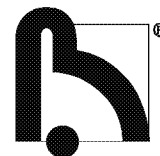


Figure 1: Calibration curve for Buprofezin

Calibration data for analysis of Buprofezin technical:

LC-Instrument	Nominal concentration [µg/L]	Measured concentration [ng/mL]	Recovery [% of nominal]
19 CRB 0002-Cal 1	10.95	10.33	94.4
19 CRB 0002-Cal 2	27.36	26.80	97.9
19 CRB 0002-Cal 3	43.78	46.96	107
19 CRB 0002-Cal 4	60.20	60.97	101
19 CRB 0002-Cal 5	76.62	82.03	107
19 CRB 0002-Cal 6	93.03	90.33	97.1
19 CRB 0002-Cal 7	109.5	104.0	95.0



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
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### 8.2 Validation results

The following validation results were obtained for Buprofezin:

Table 1: Validation results for Buprofezin

Sample Name	Nominal conc. of a.i. [mg/kg]	Nominal conc. of a.i. for analysis [µg/L]	Measured conc. of a.i. [µg/L]	RCF	DF <sub>total</sub>	Analysed conc. of a.i. [mg/kg]	REC [%]
19CRB0002 Val Blank-1	0.000	0.000	0.000	-	-	<30 % of LOQ	-
19CRB0002 Val Blank-2	0.000	0.000	0.000	-	-	-	-
19CRB0002-Cal 2	-	27.36	27.10	-	-	-	99
19CRB0002 Val Low-1	3.184	31.84	27.28	1.000	100	2.739	86
19CRB0002 Val Low-2	3.184	31.84	29.61	1.000	100	2.973	93
19CRB0002 Val Low-3	3.184	31.84	29.00	1.000	100	2.911	91
19CRB0002 Val Low-4	3.184	31.84	29.39	1.000	100	2.951	93
19CRB0002 Val Low-5	3.184	31.84	29.24	1.000	100	2.936	92
19CRB0002-Cal 2	-	27.36	27.41	-	-	-	100
19CRB0002-Cal 5	-	76.62	82.49	-	-	-	108
19CRB0002 Val High-1	796.0	79.60	70.44	0.9266	10000	652.7	82
19CRB0002 Val High-2	796.0	79.60	73.73	0.9266	10000	683.1	86
19CRB0002 Val High-3	796.0	79.60	74.80	0.9266	10000	693.1	87
19CRB0002 Val High-4	796.0	79.60	75.41	0.9266	10000	698.8	88
19CRB0002 Val High-5	796.0	79.60	77.04	0.9266	10000	713.8	90
19CRB0002-Cal 5	-	76.62	82.88	-	-	-	108

LOQ: 3.184 mg/kg, corresponding to 31.84 µg/L

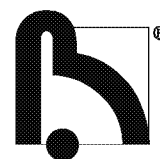
Table 2: Summary of Buprofezin validation:

Validation	Repli-cates	Nominal conc. of a.i. [mg/kg]	Mean analysed conc. of a.i. [mg/kg]	Mean REC [% of nominal]	RSD [%]
Low concentration (LOQ)	5	3.184	2.902	91	3.2
High concentration	5	796.0	688.3	86	3.3
Untreated val. samples	2	0.000	<LOD	-	-

Validation blank samples (untreated validation samples) had peak areas of less than 30% of the lowest validated concentration. No interfering peaks were detected.

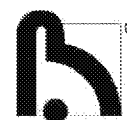
The specificity of the method was assured by multiple reaction monitoring (MRM)-detection, constant retention time and the absence of interfering peaks. The recovery and precision data show that the influences of test medium were within the limits of the guidance document SANCO/3029/99; all criteria were fulfilled:

- blank values did not exceed 30% of the lowest validated concentration,
- mean recoveries for each level were in the range 70-110%,
- the RSD was < 20% per level.



## Appendix 15 (continued): Analytical phase report

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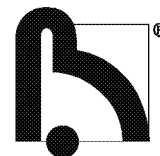


### 8.3 Results of sample analysis

The following concentrations of Buprofezin were found:

*Analysis results of Buprofezin:*

Specimen	Nominal conc. of a.i. [mg/kg]	Nominal conc. of a.i. regarding DF [µg/L]	Measured conc. of a.i. [µg/L]	RCF	DF <sub>total</sub>	Analysed conc. of a.i. [mg/kg]	Recovery [%]
18BLC0021-D3-BC-A	0.000	0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D4-BC-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D5-BC-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D6-BC-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D3-BC-24hr-A	0.000	0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D4-BC-24hr-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D5-BC-24hr-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D6-BC-24hr-A		0.000	0.000	-	-	< 30% of LOQ	-
18BLC0021-D3-ET-A	6.338	63.38	54.72	0.9893	100	5.413	86
18BLC0021-D4-ET-A		63.38	58.16	0.9893	100	5.754	91
18BLC0021-D5-ET-A		63.38	58.93	0.9893	100	5.830	92
18BLC0021-D6-ET-A		63.38	42.85	0.9893	100	4.239	67
18BLC0021-D6-ET-R		63.38	58.71	0.9774	100	5.736 (4.989)	91 (79)
18BLC0021-D3-ET-24hr-A	6.338	63.38	53.33	0.9889	100	5.273	83
18BLC0021-D4-ET-24hr-A		63.38	52.66	0.9889	100	5.208	82
18BLC0021-D5-ET-24hr-A		63.38	52.76	0.9889	100	5.217	82
18BLC0021-D6-ET-24hr-A		63.38	56.44	0.9889	100	5.581	88
18BLC0021-D3-DT-A	63.38	63.38	56.50	0.9843	1000	55.61	88
18BLC0021-D4-DT-A		63.38	58.41	0.9843	1000	57.48	91
18BLC0021-D5-DT-A		63.38	59.32	0.9843	1000	58.38	92
18BLC0021-D6-DT-A		63.38	63.67	0.9843	1000	62.66	99
18BLC0021-D3-DT-24hr-A	63.38	63.38	54.86	0.9786	1000	53.67	86
18BLC0021-D4-DT-24hr-A		63.38	56.39	0.9786	1000	55.17	87
18BLC0021-D5-DT-24hr-A		63.38	32.38	0.9786	1000	31.69	50
18BLC0021-D6-DT-24hr-R		63.38	56.61	0.9774	1000	55.33 (43.51)	87 (69)
18BLC0021-D6-DT-24hr-A		63.38	56.40	0.9786	1000	55.19	87
18BLC0021-D3-CT-A	158.4	63.38	52.08	0.9810	2500	127.7	81
18BLC0021-D4-CT-A		63.38	57.98	0.9810	2500	142.2	90
18BLC0021-D5-CT-A		63.38	57.09	0.9810	2500	140.0	88
18BLC0021-D6-CT-A		63.38	19.25	0.9810	2500	47.22	30*
18BLC0021-D6-CT-R		63.38	36.84	0.9774	2500	90.02	57
18BLC0021-D3-CT-24hr-A	158.4	63.38	60.56	0.9718	2500	123	78
18BLC0021-D3-CT-24hr-R		63.38	49.04	0.9774	2500	119.8 (121.3)	76 (77)
18BLC0021-D4-CT-24hr-A		63.38	54.84	0.9718	2500	133	84
18BLC0021-D5-CT-24hr-A		63.38	53.90	0.9718	2500	131	83
18BLC0021-D6-CT-24hr-A		63.38	235.2	0.9718	2500	572	361*
18BLC0021-D6-CT-24hr-R		63.38	57.05	0.9774	2500	139.4	88



## Appendix 15 (continued): Analytical phase report

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Specimen	Nominal conc. of a.i. [mg/kg]	Nominal conc. of a.i. regarding DF [µg/L]	Measured conc. of a.i. [µg/L]	RCF	DF <sub>total</sub>	Analysed conc. of a.i. [mg/kg]	Recovery [%]
18BLC0021-D3-BT-A	316.9	63.38	41.72	0.9717	5000	202.7	64
18BLC0021-D3-BT-R		63.38	40.49	0.7114	5000	144.0 (173.4)	45 (55)
18BLC0021-D4-BT-A		63.38	50.13	0.9717	5000	213.6	77
18BLC0021-D4-BT-R		63.38	48.33	0.7114	5000	171.9 (207.7)	54 (66)
18BLC0021-D5-BT-A		63.38	49.08	0.9717	5000	238.5	75
18BLC0021-D5-BT-R		63.38	43.81	0.7114	5000	155.6 (197.1)	49 (62)
18BLC0021-D6-BT-A		63.38	30.03	0.9717	5000	145.9	46
18BLC0021-D6-BT-R		63.38	44.84	0.7114	5000	159.5 (152.7)	50 (48)
18BLC0021-D3-BT-24hr-A	316.9	63.38	41.46	0.9757	5000	202.3	64
18BLC0021-D3-BT-24hr-R		63.38	44.00	0.9812	5000	215.9 (209.1)	68 (66)
18BLC0021-D4-BT-24hr-A		63.38	45.74	0.9757	5000	223.1	70
18BLC0021-D4-BT-24hr-R		63.38	48.17	0.9812	5000	236.4 (229.7)	75 (72)
18BLC0021-D5-BT-24hr-A		63.38	45.95	0.9757	5000	224.2	71
18BLC0021-D5-BT-24hr-R		63.38	46.67	0.9812	5000	229.0 (226.6)	72 (71)
18BLC0021-D6-BT-24hr-A		63.38	51.14	0.9757	5000	249.5	79
18BLC0021-D6-BT-24hr-R		63.38	38.37	0.9812	5000	188.3 (218.9)	59 (69)
18BLC0021-D3-AT-A	633.8	63.38	34.93	0.9756	10000	340.8	54
18BLC0021-D3-AT-R		63.38	37.30	0.9824	10000	366.4 (353.6)	58 (56)
18BLC0021-D4-AT-A		63.38	35.17	0.9756	10000	343.1	54
18BLC0021-D4-AT-R		63.38	33.77	0.9824	10000	331.6 (337.5)	52 (53)
18BLC0021-D5-AT-A		63.38	40.00	0.9756	10000	390.2	62
18BLC0021-D5-AT-R		63.38	37.54	0.9824	10000	368.8 (379.5)	58 (60)
18BLC0021-D6-AT-A		63.38	43.90	0.9756	10000	428.3	68
18BLC0021-D6-AT-R		63.38	43.67	0.9824	10000	429.0 (428.7)	66 (68)
18BLC0021-D3-AT-24hr-A	633.8	63.38	36.75	0.9793	10000	359.9	57
18BLC0021-D3-AT-24hr-R		63.38	36.28	0.9881	10000	358.5 (359.2)	57 (57)
18BLC0021-D4-AT-24hr-A		63.38	33.09	0.9793	10000	324.1	51
18BLC0021-D4-AT-24hr-R		63.38	30.39	0.9881	10000	300.3 (312.2)	47 (49)
18BLC0021-D5-AT-24hr-A		63.38	40.10	0.9793	10000	392.7	62
18BLC0021-D5-AT-24hr-R		63.38	36.75	0.9881	10000	363.1 (377.9)	57 (60)
18BLC0021-D6-AT-24hr-A		63.38	0.000	0.9793	10000	0.000	< LOD *
18BLC0021-D6-AT-24hr-R		63.38	39.37	0.9881	10000	389.0	61

LOQ: 3.184 mg/kg, corresponding to 31.84 µg/L

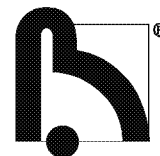
\*the value was not included in the calculation of the mean analysed conc. and mean recovery, since it was out of the calibration range

Values in brackets are mean values of sample for analysis and retain sample

The recoveries for Buprofezin were between 45 and 99% in the final diets. In the control specimens, the concentrations of the active ingredient were below 30% of LOQ.

### 8.4 Limit of Quantification (LOQ)

The limit of quantification (LOQ) was defined in the context of this study as 3.184 mg/kg for Buprofezin which corresponds to 31.84 µg/L in diluted extracts.



## Appendix 15 (continued): Analytical phase report

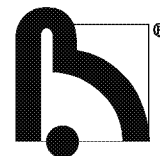
Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
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### 9 References

- Chemikaliengesetz in der Fassung der Bekanntmachung vom 28. August 2013 (BGBl. I S. 3498, 3991), das zuletzt durch Artikel 1 der Verordnung vom 22. Juni 2016 (BGBl. I S. 1479) geändert worden ist.  
Translation: Chemicals Act in the version published on 28 August 2013 (Federal Law Gazette I p. 3498, 3991), as last amended by article 1 of the Regulation of 22 June 2016 (Federal Law Gazette I p. 1479).
- OECD Principles of Good Laboratory Practice (as revised in 1997). ENV/MC/CHEM(98)17.
- EUROPEAN COMMISSION, Directorate General Health and Consumer Protection Residues: Guidance for generating and reporting methods of analysis in support of pre-registration data requirements for Annex II (part A, Section 4) and Annex III (part A, Section 5) of Directive 91/414. Working document SANCO/3029/99 rev.4, 11/07/2000.
- Guidance document on analytical quality control and method validation procedures for pesticides residues analysis in food and feed. SANTE/11813/2017 – Supersedes SANTE/11945/2015 - Implemented by 01/01/2018.





## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
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### Appendix 1: Example chromatograms

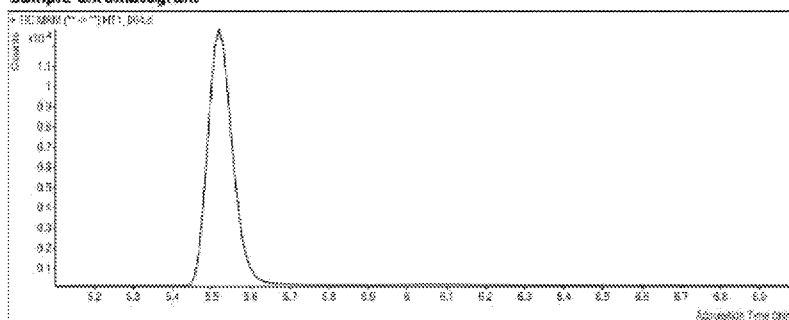
#### Quantitative Analysis Sample Report

<b>Batch Data Path</b>	C:\MassHunter\Data\19 35 CRB 0002 Buprofezin\QuantResults\HT 25 11 2018.batch.bin	<b>Analyst Name</b>	6410.Schim
<b>Analysis Time</b>	30.Nov.2018 12:57	<b>Reporter Name</b>	Agilent
<b>Report Time</b>	04.Dec.2018 11:34	<b>Batch State</b>	Processed
<b>Last Calib Update</b>	30.Nov.2018 12:57		

#### Analysis Info

<b>Acq Time</b>	2018-11-29 11:15	<b>Data File</b>	HT1_009.d
<b>Position</b>	P1-A2	<b>Sample Name</b>	19 CRB 0002-Cal 1
<b>Dilution</b>	1	<b>Sample Info</b>	
<b>Inj Vol</b>	-1.00	<b>Acq Method File</b>	Buprofezin.m
<b>Sample Type</b>	Calibration	<b>Comment</b>	

#### Sample Chromatogram



#### Quantitation Results

Compound	RT	Response	Conc	Accuracy
Buprofezin	5.519	24226	10.3277	94.36

#### Compound Graphics

Target Compound Buprofezin

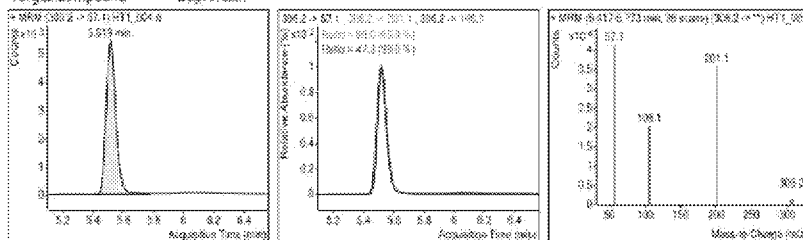
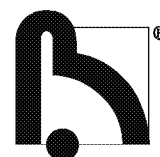
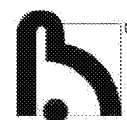


Figure 2: Chromatogram of the lowest calibration standard (nominal concentration of a.i.: 10.95 µg/L)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 19 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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## Appendix 1: Example chromatograms (continued)

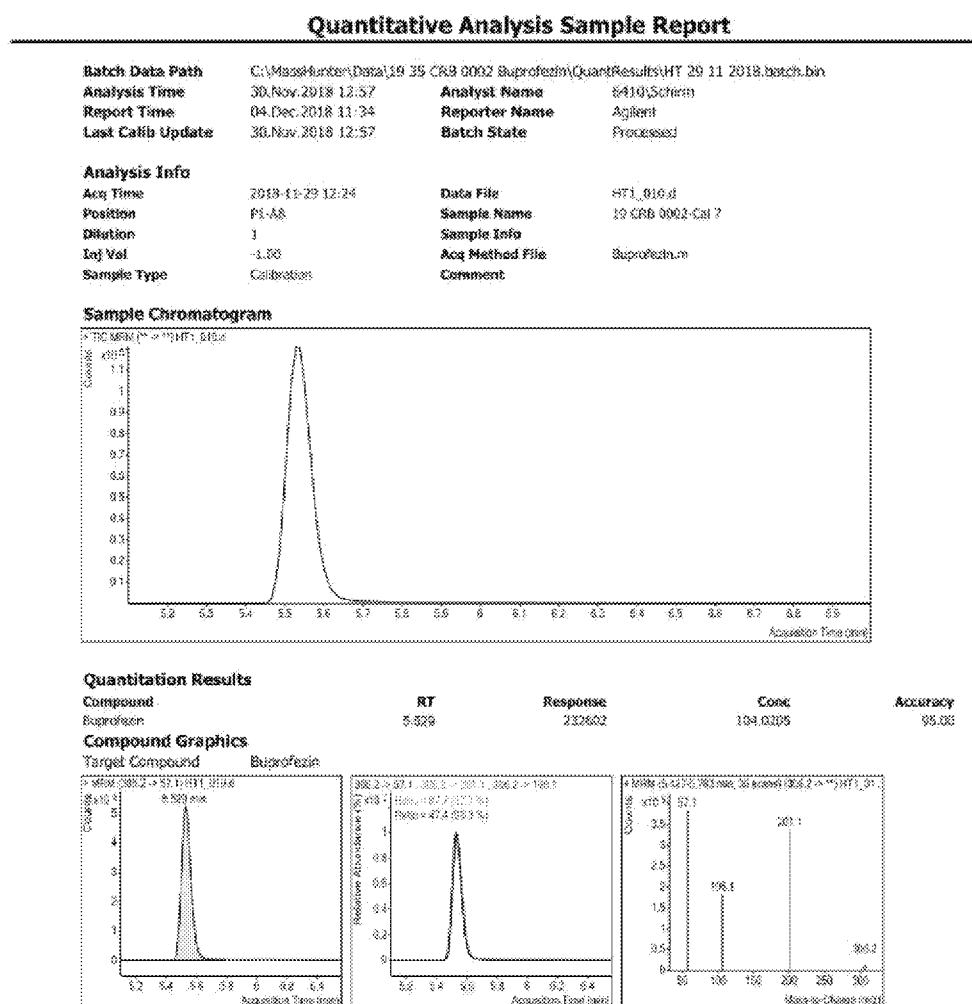
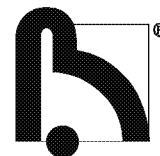


Figure 3: Chromatogram of the highest calibration standard (nominal concentration of a.i.: 109.5 µg/L)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
 Repeated exposure of honey bee larvae to Buprofezin technical  
 Page 25 of 35



## Appendix 1: Example chromatograms (continued)

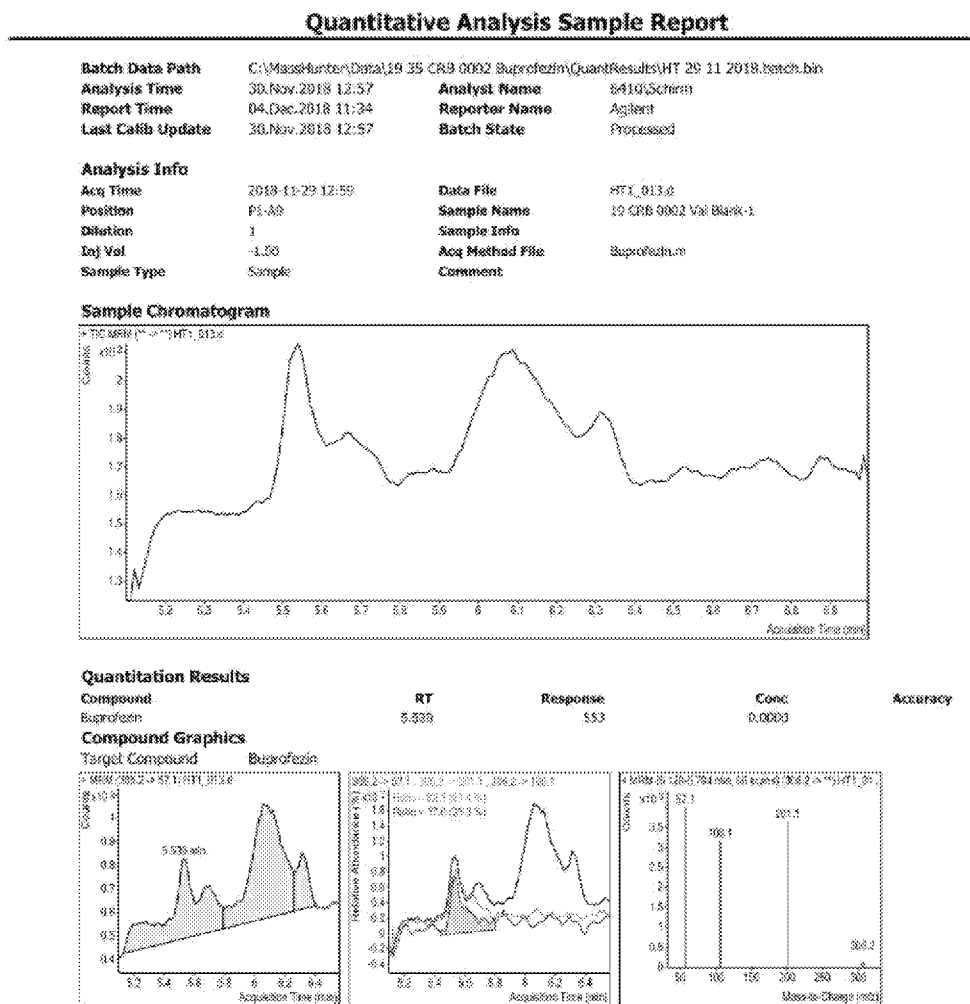
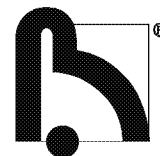


Figure 4: Chromatogram of a validation blank sample (untreated validation sample) (below 30% of LOQ)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
 Repeated exposure of honey bee larvae to Buprofezin technical  
 Page 26 of 35



## Appendix 1: Example chromatograms (continued)

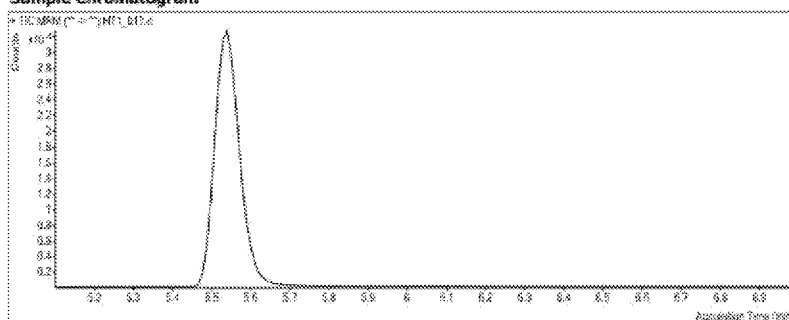
### Quantitative Analysis Sample Report

<b>Batch Data Path</b>	C:\MassHunter\Data\18 35 CRB 0002 Buprofezin\QuantResults\HT 29 11 2018\batch1.b	<b>Analyst Name</b>	5410\Schim
<b>Analysis Time</b>	30.Nov.2018 12:57	<b>Reporter Name</b>	Agilent
<b>Report Time</b>	04.Dec.2018 11:34	<b>Batch State</b>	Processed
<b>Last Calib Update</b>	30.Nov.2018 12:57		

#### Analysis Info

<b>Acq Time</b>	2018-11-29 13:46	<b>Date File</b>	HT1_017.d
<b>Position</b>	P1-02	<b>Sample Name</b>	18 CRB 0002 Val Low-1
<b>Dilution</b>	1	<b>Sample Info</b>	
<b>Inj Vol</b>	-1.00	<b>Acq Method File</b>	Buprofezin.m
<b>Sample Type</b>	Sample	<b>Comment</b>	

#### Sample Chromatogram



#### Quantitation Results

Compound	RT	Response	Conc	Accuracy
Buprofezin	5.529	61937	27.2042	

#### Compound Graphics

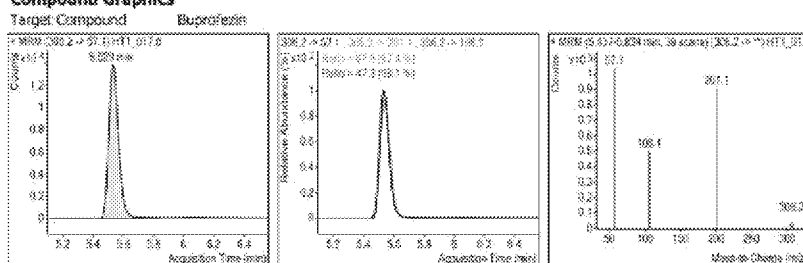
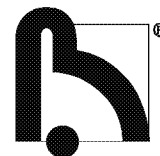


Figure 5: Chromatogram of a low level validation sample (LOQ) (DF<sub>Total</sub>: 190, nominal conc. of a.i.: 3.184 mg/kg, nominal conc. of a.i. regarding DF: 31.84 µg/L, analysed conc. of a.i.: 2.739 mg/kg)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 27 of 35



## Appendix 1: Example chromatograms (continued)

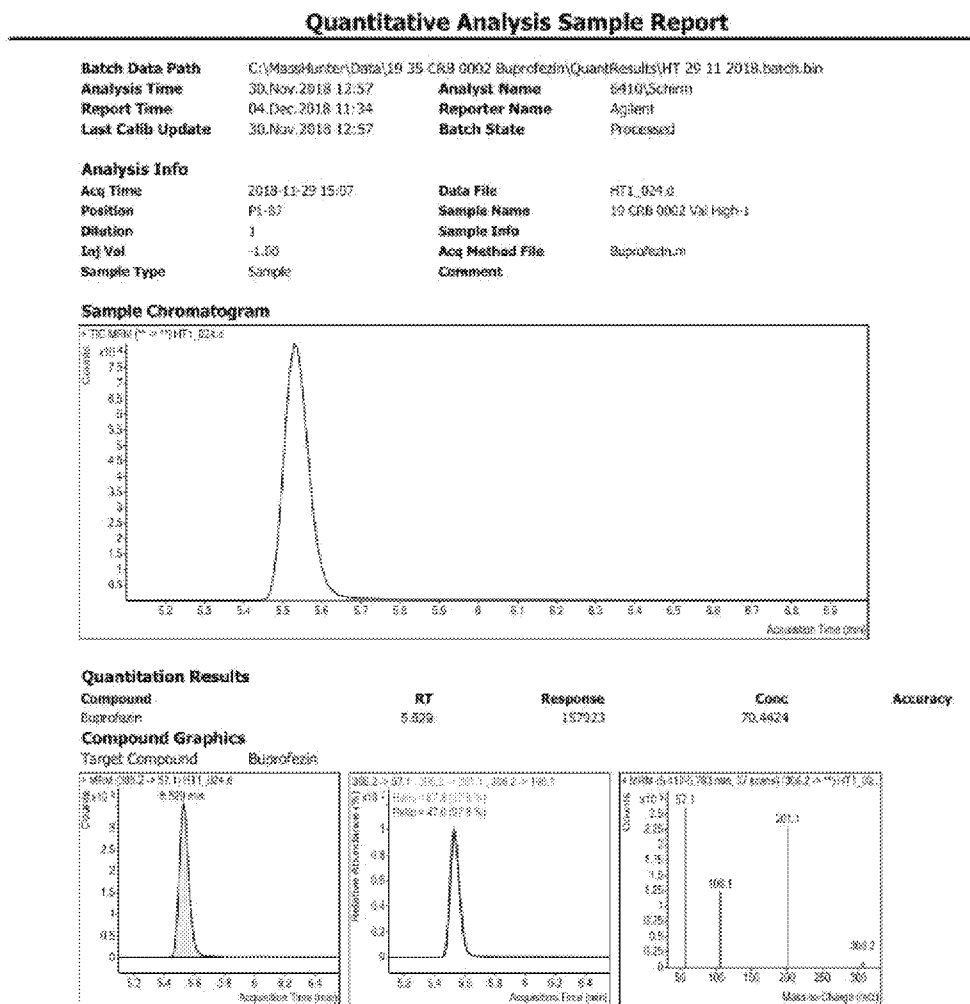
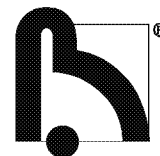


Figure 6: Chromatogram of a high level validation sample ( $DF_{\text{total}}$ : 10000, nominal conc. of a.i.: 796.0 mg/kg, nominal conc. of a.i. regarding  $DF$ : 79.60  $\mu\text{g/L}$ , analysed conc. of a.i.: 652.7 mg/kg)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 28 of 35



## Appendix 1: Example chromatograms (continued)

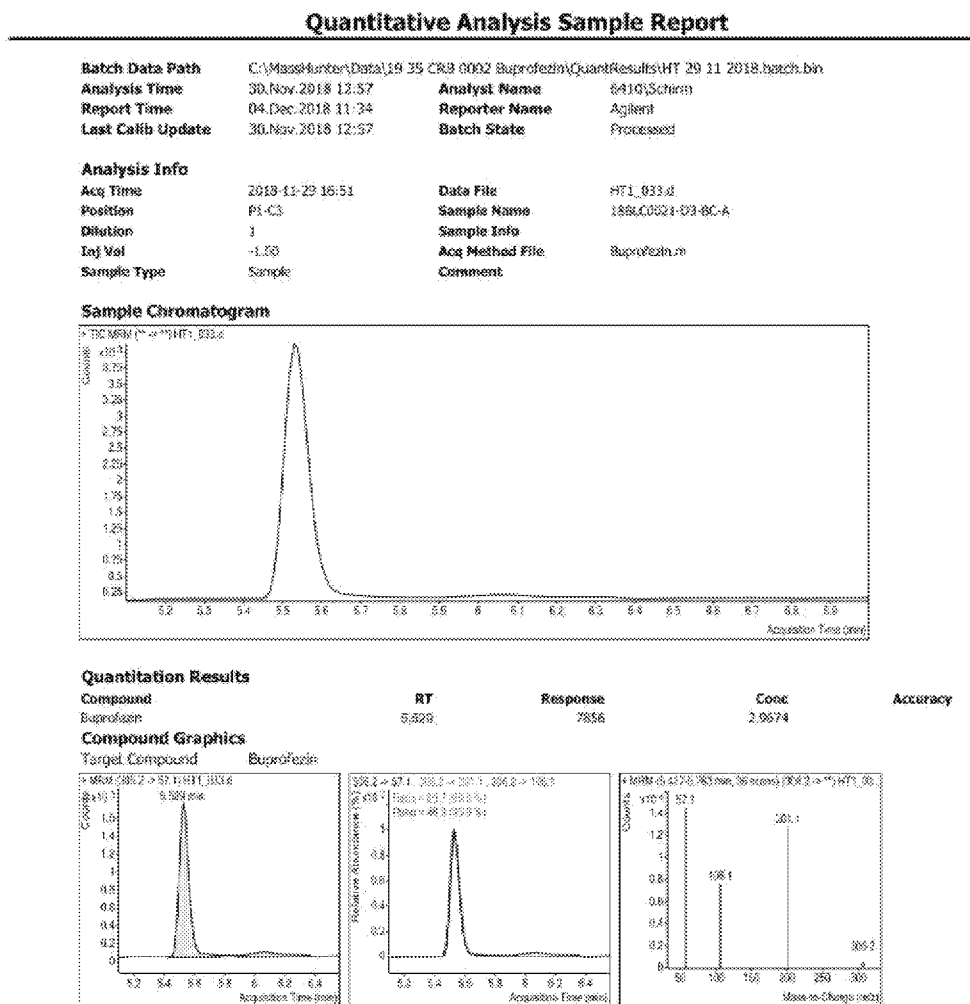
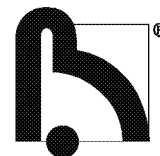


Figure 7: Chromatogram of a diluted sample solution 18BLC0021-D3-BC-A ( $DF_{Total}$ : 100, nominal conc. of a.i.: 0.000 mg/kg, nominal conc. of a.i. regarding  $DF$ : 0.000  $\mu$ g/L, analysed conc. of a.i.: < 30% of LOQ)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 29 of 35



## Appendix 1: Example chromatograms (continued)

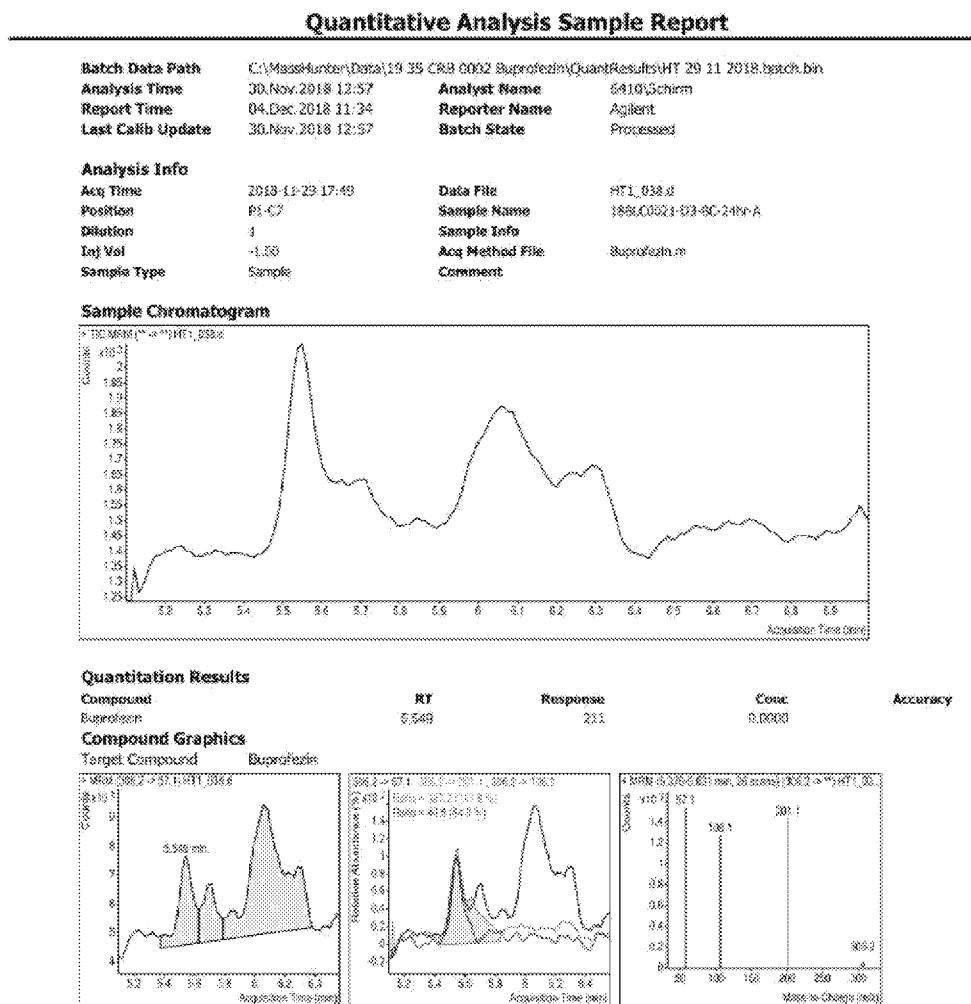
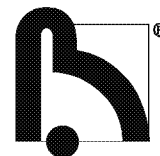


Figure 8: Chromatogram of diluted sample solution 18BLC0021-BC-24hr-A ( $DF_{Total}$ : 100, nominal conc. of a.i.: 0.000 mg/kg, nominal conc. of a.i. regarding  $DF$ : 0.000  $\mu$ g/L, analysed conc. of a.i.: < 30% of LOQ)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 30 of 35



## Appendix 1: Example chromatograms (continued)

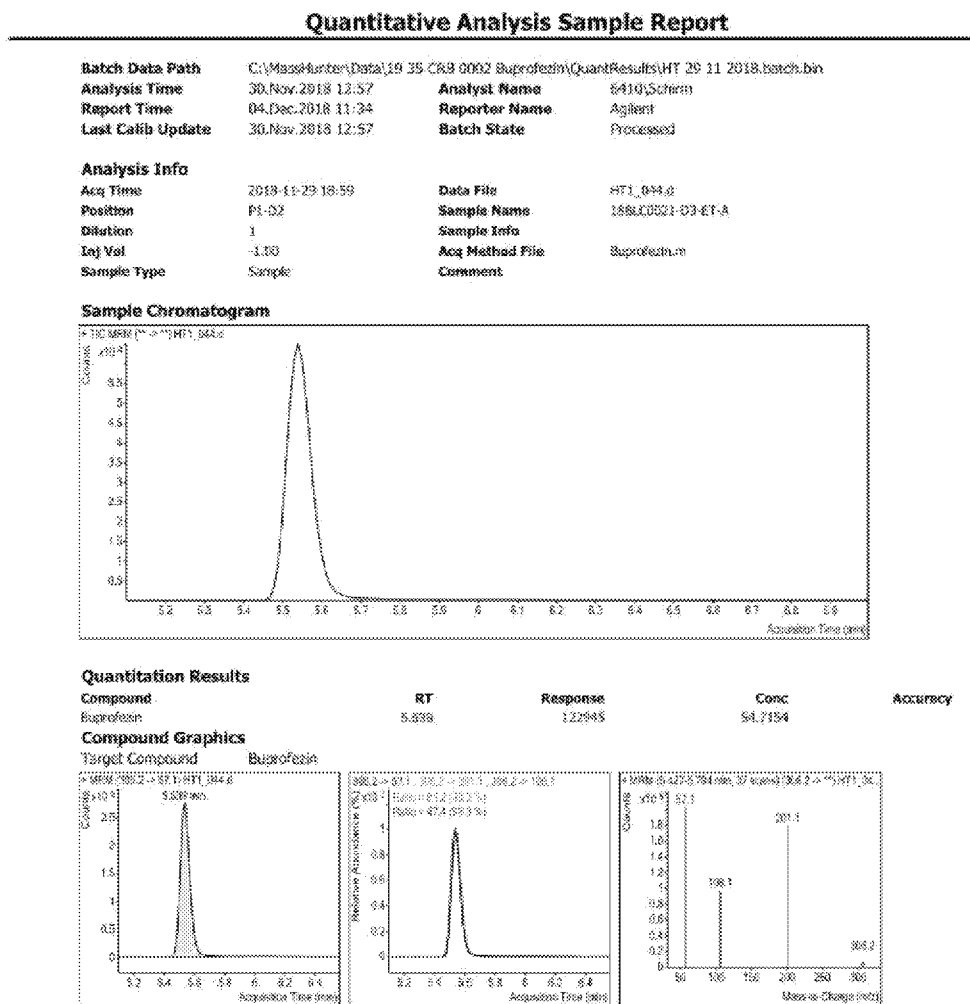
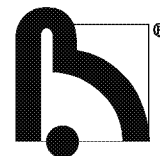


Figure 9: Chromatogram of diluted sample solution 18BLC0021-D3-ET-A ( $DF_{Total}$ : 100, nominal conc. of a.i.: 6.338 mg/kg, nominal conc. of a.i. regarding  $DF$ : 63.38  $\mu$ g/L, analysed conc. of a.i.: 5.413 mg/kg)





## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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## Appendix 1: Example chromatograms (continued)

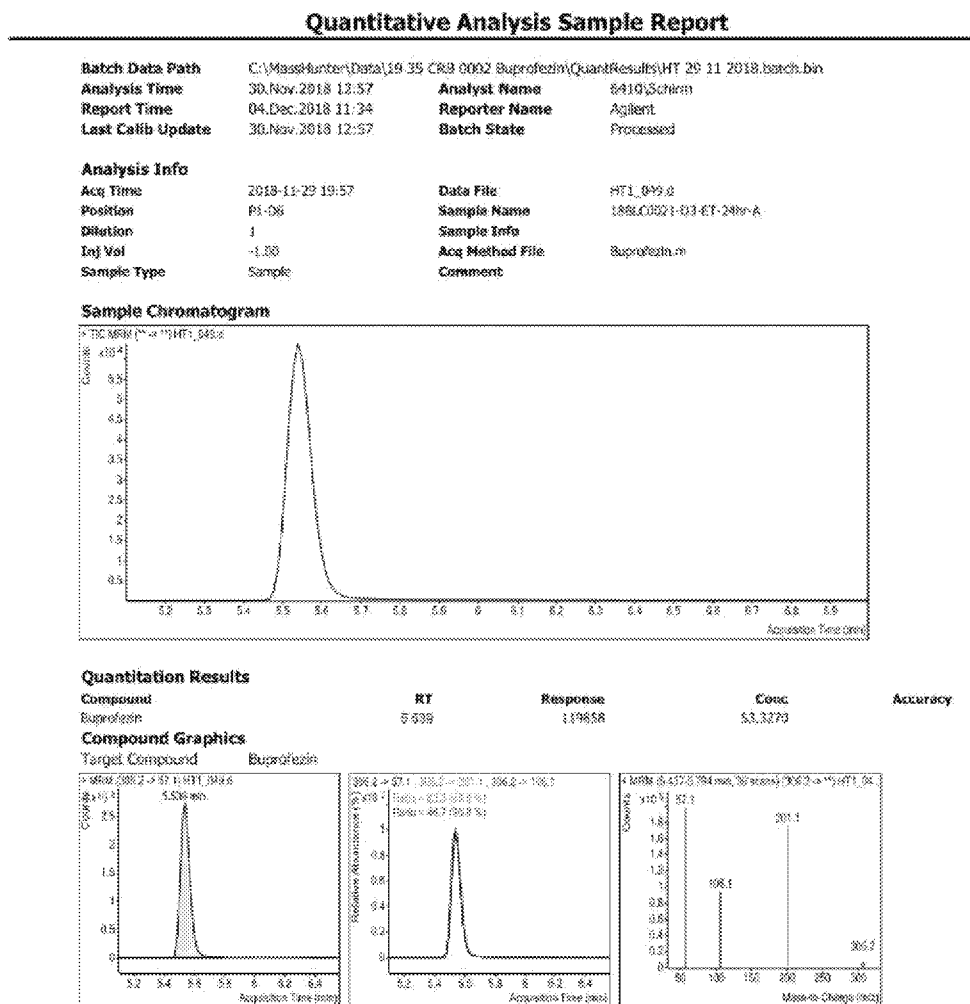
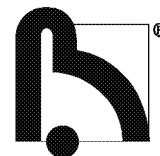


Figure 10: Chromatogram of diluted sample solution 18BLC0021-D3-ET-24hr-A ( $DF_{total}$ : 100, nominal conc. of a.i.: 6.338 mg/kg, nominal conc. of a.i. regarding  $DF$ : 63.38  $\mu$ g/L, analysed conc. of a.i.: 5.273 mg/kg)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 32 of 35



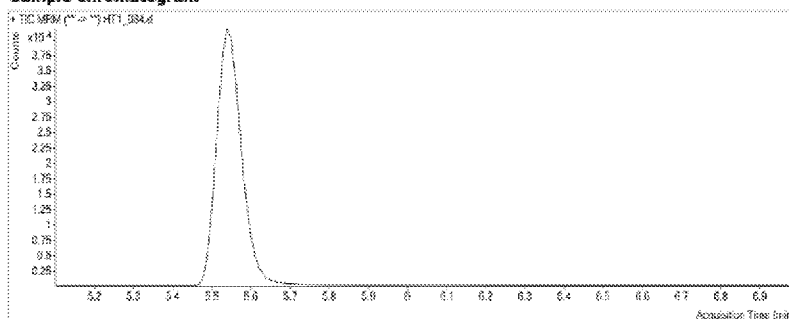
## Appendix 1: Example chromatograms (continued)

### Quantitative Analysis Sample Report

<b>Batch Data Path</b>	C:\MassHunter\Data\18 35 CRB 0002 Buprofezin\QuantResults\HT 29 11 2018.batch.bin	<b>Analyst Name</b>	6410\Schirm
<b>Analysis Time</b>	30.Nov.2018 12:57	<b>Reporter Name</b>	Agilent
<b>Report Time</b>	04.Dec.2018 11:34	<b>Batch State</b>	Processed
<b>Last Calib Update</b>	30.Nov.2018 12:57		

<b>Analysis Info</b>		<b>Data File</b>	HT1_084.d
<b>Acq Time</b>	2018-11-30 02:43	<b>Sample Name</b>	18BLC0021-D3-AT-A
<b>Position</b>	P2-A7	<b>Sample Info</b>	
<b>Dilution</b>	1	<b>Acq Method File</b>	Buprofezin.m
<b>Inj Vol</b>	-1.30	<b>Comment</b>	
<b>Sample Type</b>	Sample		

#### Sample Chromatogram



#### Quantitation Results

Compound	RT	Response	Conc	Accuracy
Buprofezin	5.539	78952	34.9342	

#### Compound Graphics

Target Compound Buprofezin

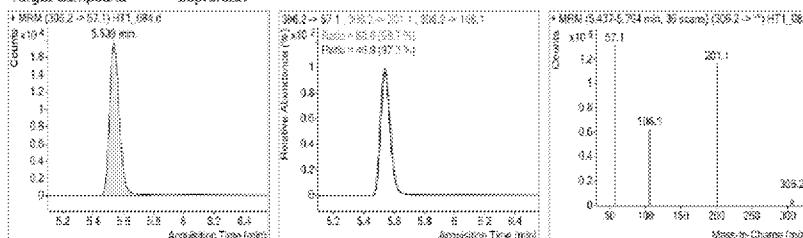
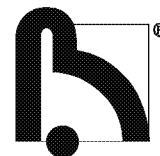


Figure 11: Chromatogram of diluted sample solution 18BLC0021-D3-AT-A ( $DF_{total}$ : 10000, nominal conc. of a.i.: 633.8 mg/kg, nominal conc. of a.i. regarding  $DF$ : 63.38  $\mu$ g/L, analysed conc. of a.i.: 340.8 mg/kg)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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## Appendix 1: Example chromatograms (continued)

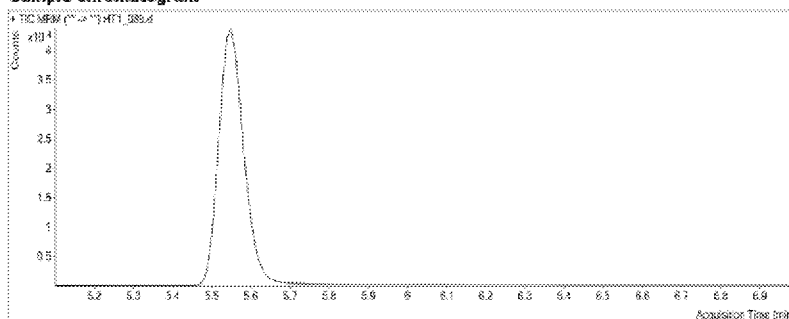
### Quantitative Analysis Sample Report

<b>Batch Data Path</b>	C:\MassHunter\Data\18 35 CRB 0002 Buprofezin\QuantResults\HT 29 11 2018.batch.bin	<b>Analyst Name</b>	6410\Schirm
<b>Analysis Time</b>	30.Nov.2018 12:57	<b>Reporter Name</b>	Agilent
<b>Report Time</b>	04.Dec.2018 11:34	<b>Batch State</b>	Processed
<b>Last Calib Update</b>	30.Nov.2018 12:57		

#### Analysis Info

<b>Acq Time</b>	2018-11-30 03:41	<b>Data File</b>	HT1_089.d
<b>Position</b>	P2-S2	<b>Sample Name</b>	18BLC0021-D3-AT-24hr-A
<b>Dilution</b>	1	<b>Sample Info</b>	
<b>Inj Vol</b>	-1.50	<b>Acq Method File</b>	Buprofezin.m
<b>Sample Type</b>	Sample	<b>Comment</b>	

#### Sample Chromatogram



#### Quantitation Results

Compound	RT	Response	Conc	Accuracy
Buprofezin	5.539	82996	36.7526	

#### Compound Graphics

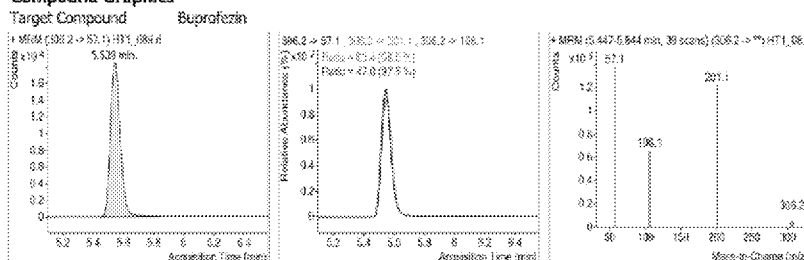
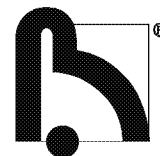


Figure 12: Chromatogram of diluted sample solution 18BLC0021-D3-AT-24hr-A ( $DF_{Total}$ : 10000, nominal conc. of a.i.: 633.8 mg/kg, nominal conc. of a.i. regarding  $DF$ : 63.38  $\mu$ g/L, analysed conc. of a.i.: 359.9 mg/kg)



## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
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## Appendix 2: Certificate of Analysis of the analytical reference item

**Nihon Nohyaku**

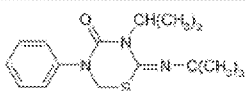
NIHON NOHYAKU CO., LTD. RESEARCH CENTER  
14, OYAMADA-CHO, KAWACHI-NAGANO, OSAKA, JAPAN

No. AD15097

### Certificate of Analysis of Buprofezin Standard

Lot Number: 5AD00242

#### General Information

Product Name	Buprofezin standard	Synonym	-
Common Name	Buprofezin	Related Product	Buprofezin
Lot Number	5AD00242		
Chemical Name (HPLC)	(Z)-2-tert-butylimino-3-isopropyl-5-phenyl-1,3,5-titadiazinan-4-one		
Structural Formula			
Storage Conditions	Store in refrigerator and dark condition		
Expiration Date	31 May 2021 It has been established that this chemical substance was stable for 2204 days under the described storage conditions, referenced by LSRC-A01-023A. This substance would be stable for the same term from the date of analysis for the purity determination.		

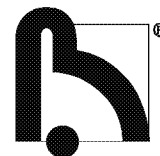
#### Analytical Information

Purity	99.5% (RSD=0.19%, n=9)
& Identification	The chemical structure was identified by <sup>1</sup> H-NMR. (Date of analysis: 19 May 2015. Report number: LSRC-A15-076A, Study number: GE-03, 15-0853)
This analytical work was conducted in accordance with Good Laboratory Practice regulation. The raw data is retained in the Nihon Nohyaku Research Center Archives, Kawachi-nagano, Osaka.	
(Signature) <i>Chikara Ohira</i>	22 May 2015
Study Director Chikara Ohira	Date
NIHON NOHYAKU CO., LTD. RESEARCH & DEVELOPMENT DIVISION, PROCESS RESEARCH UNIT	

(Signature) *H. Nakarishi*  
Authorization Hironori Nakarishi  
NIHON NOHYAKU CO., LTD.  
RESEARCH & DEVELOPMENT DIVISION, RESEARCH ADMINISTRATION UNIT

22 May 2015  
Issue date

THIS IS A TRUE COPY  
OF ORIGINAL  
DATE: 2 May 2015  
NAME: Yaku Katsuh



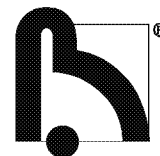
## Appendix 15 (continued): Analytical phase report

Analytical phase report to study 18 48 BLC 0021, BioChem project No. (analytical phase): 18 35 CRB 0002  
Repeated exposure of honey bee larvae to Buprofezin technical  
Page 35 of 35



### Appendix 3: Deviations to study plan concerning the analytical phase of the study (not amended)

Deviation No.	Date	Concerning	Reason for deviation
none			



## Appendix 16: Test item information on properties and toxicity (solubility and homogeneity testing)

Final report 18 48 BLC 0021  
Study type: Repeated exposure of honey bee larvae (A. mellifera L.)

### Test item info on properties and toxicity (non-GLP)

Test item	Buprofezin TGA1
Intended use	Insecticide
BioChem Storage No.	2018/0066
Solubility at 20 °C <sup>1</sup>	In water: 0.46 mg/L In acetone: 253000 mg/L
LogP <sup>1</sup>	4.93
Degradation <sup>1</sup>	Aqueous photolysis DT50 (days) at pH 7: 33 Aqueous hydrolysis DT50 (days) at pH 7: Stable pH 5 (51 d) to pH 9 (396 d)
Toxicity data <sup>1</sup>	Honeybee – acute toxicity 48 hour LD <sub>50</sub> : Contact: > 200 µg/bee Oral: > 163.5 µg/bee
References	<sup>1</sup> LEWIS, K.A., TZILIVAKIS, J., WARNER, D. AND GREEN, A. (2016). An international database for pesticide risk assessments and management. <i>Human and Ecological Risk Assessment: An International Journal</i> , 22(4), 1050–1064. <a href="http://dx.doi.org/10.1080/10807039.2015.1133242">http://dx.doi.org/10.1080/10807039.2015.1133242</a> .

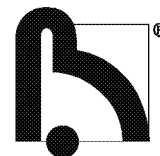
Requested test item concentration	Dose		Concentration			Dilution factor
	[µg product/ larva]	[µg a.i./ larva]	[mg product/ kg food]	[mg a.i./ kg food]	[mg a.i./ L food]	
AT	100.61	100.11	636.53	633.35	715.05	
BT	50.30	50.05	318.26	316.67	357.52	2.00
CT	25.15	25.03	159.13	158.34	178.76	2.00
DT	10.06	10.01	63.65	63.33	71.50	2.50
ET	1.01	1.00	6.37	6.33	7.15	10.00

Sample preparation and analytical verification	- Weighing of 0.702 g test item and diluting in acetone to a final volume of 5 mL - Preparation of dilutions A to E (medium for filling up: acetone):						
	mL	of Stock or dilution	add medium [mL]	final volume [mL]	resulting dilution	% w/v	Concentration in dilution [µg product/mL]
	5	Base stock	0	5	StA	14.04000	140.400
	2.5	StA	2.5	5	StB	7.02000	70.200
	2.5	StB	2.5	5	StC	3.51000	35.100
	2	StC	3	5	StD	1.40400	14.040
	0.5	StD	4.5	5	StE	0.14040	1.404

- Preparation of diet: Mixing royal jelly and aqueous sugar solution (18% Glucose, 18% Fructose, 4% Yeast extract (w/v) in deionized water) at a ratio of 1:1 - Mixing 36.4 µL of dilution into the diet to obtain the requested test item concentration - Shaking on a Multitube vortex shaker (DVX-2500, VWR; 2500 rpm, 5 minutes) using ceramic beads for intensify homogenisation  - Extraction of 1 g sample with 5 mL acetonitrile + 5 mL deionized water using QuEChERS method - Dilution of QuEChERS extract and measuring with matrix matched calibration (HPLC-MS/MS)						
--	--	--	--	--	--	--



## Appendix 16 (continued): Test item information on properties and toxicity (solubility and homogeneity testing)

BioControl agent Project No.: 18 48 BLC 0021  
Study type: Repeated exposure of honey bee larvae (4, instars 1-3)

<b>Results</b>	1. Solubility in dilution medium: clearly dissolved				
	2. Homogeneity in larval diet (confirmed by analytical verification):				
	<b>Treatment</b>	<b>Dose [µg a.i./larva]</b>	<b>Expected concentration [mg a.i./kg food]</b>	<b>Mean Recovery [%]</b>	<b>Standard Deviation [%]</b>
	AT	100.11	633.35	86	8.05
	BT	50.05	316.67	103	3.33
	CT	25.03	158.34	94	3.23
	DT	10.01	63.33	95	2.26
	ET	1.00	6.33	108	0.55
Results from analytical verification are highlighted in bold font					
<b>Evaluation of results</b>	1. Solubility of the test item in acetone is given				
	2. Homogeneity of the test item in the larval diet is given in the range of tested concentrations				
	→ The test item can be used for honey bee larval feeding tests with repeated exposure, because it can be dissolved in an acetone stock which is used for spiking the larval diet. In the larval diet, the test item can be homogeneously distributed ensuring that each larva from each dosage group will be treated with an equal amount of test item.				

Date: 20.04.2018

Signature: H. Schaller

Message

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 8/27/2019 3:52:51 PM  
**To:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:43 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna  
**Sent:** Tuesday, August 27, 2019 11:38 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:34 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** Re: Atrazine ESA vs FIFRA Table

Thanks Colleen. I think this looks good.

Sent from my iPhone

> On Aug 27, 2019, at 8:29 AM, Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov> wrote:

## Ex. 5 Deliberative Process (DP)

> -----Original Message-----

> **From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> **Sent:** Tuesday, August 27, 2019 11:14 AM  
> **To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> **Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> **Subject:** RE: Atrazine ESA vs FIFRA Table



> And, leave in the measured portion, for atz, and ESA.  
>  
> -----Original Message-----  
> From: Louie-Juzwiak, Rosanna  
> Sent: Tuesday, August 27, 2019 11:13 AM  
> To: Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
>

## Ex. 5 Deliberative Process (DP)

>  
> -----Original Message-----  
> From: Spatz, Dana <Spatz.Dana@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:08 AM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen  
<Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
>  
> What do you suggest it say?  
>  
> -----Original Message-----  
> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:07 AM  
> To: Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
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## Ex. 5 Deliberative Process (DP)

>  
> -----Original Message-----  
> From: Spatz, Dana <Spatz.Dana@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:03 AM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen  
<Rossmeisl.Colleen@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
>

## Ex. 5 Deliberative Process (DP)

>  
> -----Original Message-----  
> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Tuesday, August 27, 2019 11:00 AM  
> To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
> Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
> Subject: FW: Atrazine ESA vs FIFRA Table  
>

## Ex. 5 Deliberative Process (DP)

> -----Original Message-----  
> From: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
> Sent: Tuesday, August 27, 2019 10:51 AM  
> To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>;  
Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
> Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth  
<Donovan.Elizabeth@epa.gov>  
> Subject: RE: Atrazine ESA vs FIFRA Table  
>  
> Thanks Rosanna. I simplified the table and made it consistent with the level of detail in paper and  
combined it into one document. Could the team review and let me know if you have any final suggestions?  
Thanks!  
>  
> Marietta  
>  
>  
>  
> -----Original Message-----  
> From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
> Sent: Tuesday, August 27, 2019 8:57 AM

> To: Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
 > Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
 > Subject: RE: Atrazine ESA vs FIFRA Table  
 >  
 > Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.  
 >  
 > Rosanna  
 >  
 > -----Original Message-----  
 > From: Anderson, Brian <Anderson.Brian@epa.gov>  
 > Sent: Tuesday, August 27, 2019 7:53 AM  
 > To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
 > Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
 > Subject: RE: Atrazine ESA vs FIFRA Table  
 >  
 > Thanks guys - I had a couple of edits on the table. Please let me know if you have any questions.  
 >  
 > Brian  
 >  
 >  
 >  
 > -----Original Message-----  
 > From: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
 > Sent: Monday, August 26, 2019 4:41 PM  
 > To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
 > Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
 > Subject: RE: Atrazine ESA vs FIFRA Table  
 >  
 > Hi Marietta -

## Ex. 5 Deliberative Process (DP)

got

> Thanks!  
 > Colleen  
 >  
 > -----Original Message-----  
 > From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
 > Sent: Monday, August 26, 2019 4:23 PM  
 > To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
 > Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
 > Subject: Atrazine ESA vs FIFRA Table  
 >  
 > Hi Marietta,  
 >  
 > Attached is the draft summary table- please let me know if you have any comments or questions.  
 >  
 >  
 > <Atrazine Background ESA v. FIFRA 8.27.2019\_cmr.docx>

Message

---

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 8/27/2019 3:29:07 PM  
**To:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** RE: Atrazine ESA vs FIFRA Table  
**Attachments:** Atrazine Background ESA v. FIFRA 8.27.2019\_cmr.docx

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:14 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

### Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna  
**Sent:** Tuesday, August 27, 2019 11:13 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:08 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

What do you suggest it say?

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:07 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
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**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
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**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>

Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

The exposure row does say predicted or measured for atz, so monitoring is covered.

-----Original Message-----

From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
Sent: Tuesday, August 27, 2019 11:00 AM  
To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
Cc: Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: FW: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

From: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Sent: Tuesday, August 27, 2019 10:51 AM  
To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Thanks Rosanna. I simplified the table and made it consistent with the level of detail in paper and combined it into one document. Could the team review and let me know if you have any final suggestions?  
Thanks!

Marietta

-----Original Message-----

From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
Sent: Tuesday, August 27, 2019 8:57 AM  
To: Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.

Rosanna

-----Original Message-----

From: Anderson, Brian <Anderson.Brian@epa.gov>  
Sent: Tuesday, August 27, 2019 7:53 AM  
To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Thanks guys - I had a couple of edits on the table. Please let me know if you have any questions.

Brian

-----Original Message-----

From: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
Sent: Monday, August 26, 2019 4:41 PM  
To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Hi Marietta -

Here is the draft summary table with our last edits incorporated. That last version inadvertently got sent still in track changes (iPhone malfunction!) - we are sending the clean one here.

Thanks!  
Colleen

-----Original Message-----

From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>

Sent: Monday, August 26, 2019 4:23 PM

To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>

Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>

Subject: Atrazine ESA vs FIFRA Table

Hi Marietta,

Attached is the draft summary table- please let me know if you have any comments or questions.

Message

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 8/27/2019 3:13:48 PM  
**To:** Louie-Juzwiak, Rosanna [Louie-Juzwiak.Rosanna@epa.gov]; Spatz, Dana [Spatz.Dana@epa.gov]  
**CC:** Donovan, Elizabeth [Donovan.Elizabeth@epa.gov]  
**Subject:** RE: Atrazine ESA vs FIFRA Table

You guys are not giving me a chance to answer :) -  
People walking in my office!  
Give me another sec...

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:13 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:08 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

What do you suggest it say?

-----Original Message-----

**From:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:07 AM  
**To:** Spatz, Dana <Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

This is what the row currently says:

## Ex. 5 Deliberative Process (DP)

-----Original Message-----

**From:** Spatz, Dana <Spatz.Dana@epa.gov>  
**Sent:** Tuesday, August 27, 2019 11:03 AM  
**To:** Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** RE: Atrazine ESA vs FIFRA Table

The exposure row does say predicted or measured for atz, so monitoring is covered.

-----Original Message-----

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**Sent:** Tuesday, August 27, 2019 11:00 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>  
**Cc:** Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** FW: Atrazine ESA vs FIFRA Table

## Ex. 5 Deliberative Process (DP)

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**From:** Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
**Sent:** Tuesday, August 27, 2019 10:51 AM

To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>;  
Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth  
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Subject: RE: Atrazine ESA vs FIFRA Table

Thanks Rosanna. I simplified the table and made it consistent with the level of detail in paper and combined it into one document. Could the team review and let me know if you have any final suggestions?  
Thanks!

Marietta

-----Original Message-----

From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
Sent: Tuesday, August 27, 2019 8:57 AM  
To: Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth  
<Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Thank you for your review, Brian. Attached is the updated file that incorporates Brian's edits.

Rosanna

-----Original Message-----

From: Anderson, Brian <Anderson.Brian@epa.gov>  
Sent: Tuesday, August 27, 2019 7:53 AM  
To: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana <Spatz.Dana@epa.gov>; Donovan, Elizabeth  
<Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Thanks guys - I had a couple of edits on the table. Please let me know if you have any questions.

Brian

-----Original Message-----

From: Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
Sent: Monday, August 26, 2019 4:41 PM  
To: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>; Echeverria, Marietta  
<Echeverria.Marietta@epa.gov>  
Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana  
<Spatz.Dana@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
Subject: RE: Atrazine ESA vs FIFRA Table

Hi Marietta -

Here is the draft summary table with our last edits incorporated. That last version inadvertently got sent still in track changes (iPhone malfunction!) - we are sending the clean one here.

Thanks!  
Colleen

-----Original Message-----

From: Louie-Juzwiak, Rosanna <Louie-Juzwiak.Rosanna@epa.gov>  
Sent: Monday, August 26, 2019 4:23 PM  
To: Echeverria, Marietta <Echeverria.Marietta@epa.gov>  
Cc: Anderson, Brian <Anderson.Brian@epa.gov>; Matuszko, Jan <Matuszko.Jan@epa.gov>; Spatz, Dana  
<Spatz.Dana@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Donovan, Elizabeth  
<Donovan.Elizabeth@epa.gov>  
Subject: Atrazine ESA vs FIFRA Table

Hi Marietta,

Attached is the draft summary table- please let me know if you have any comments or questions.

Message

---

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 10/22/2019 4:19:48 PM  
**To:** Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** RE: QA file

Thanks Chuck! I will look it over – we can discuss later.

---

**From:** Peck, Charles <Peck.Charles@epa.gov>  
**Sent:** Tuesday, October 22, 2019 12:12 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: QA file

Hi Colleen,

Attached is the file you sent with my comments in Column E.

**Ex. 5 Deliberative Process (DP)**

**Ex. 5 Deliberative Process (DP)** Maybe we can talk later this afternoon.

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 10244  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

---

**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Monday, October 21, 2019 11:07 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** QA file

Hi Chuck –

Here is the QA file I wanted you to look at.

**Ex. 5 Deliberative Process (DP)**

**Ex. 5 Deliberative Process (DP)**

Any feedback is appreciated!!

Thanks –  
Colleen



Message

---

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 10/22/2019 3:07:04 AM  
**To:** Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** QA file  
**Attachments:** QC MAGtool spreadsheet\_10-16-19.xlsx

Hi Chuck –

Here is the QA file I wanted you to look at:

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Any feedback is appreciated!!

Thanks –  
Colleen

Message

---

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 5/17/2019 7:18:12 PM  
**To:** Connolly, Jennifer [Connolly.Jennifer@epa.gov]  
**Subject:** RE: Overlap tables follow-up

Working from home – well, technically not anymore! ;) Time to turn off the email – have a good weekend!

---

**From:** Connolly, Jennifer  
**Sent:** Friday, May 17, 2019 2:36 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: Overlap tables follow-up

Are you in the office today or working from home?

---

**From:** Rossmeisl, Colleen  
**Sent:** Friday, May 17, 2019 2:27 PM  
**To:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Subject:** RE: Overlap tables follow-up

Ugh, sorry about that – at least try to get out and enjoy some sunshine!!

---

**From:** Connolly, Jennifer  
**Sent:** Friday, May 17, 2019 2:26 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: Overlap tables follow-up

And yes, I'm not working today, in theory.... 😊

---

**From:** Rossmeisl, Colleen  
**Sent:** Friday, May 17, 2019 2:25 PM  
**To:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Subject:** RE: Overlap tables follow-up

HA! Emails passing in space... All good.

---

**From:** Connolly, Jennifer  
**Sent:** Friday, May 17, 2019 2:23 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: Overlap tables follow-up

Adding the redundancy for the Ag/NonAg composite is very simple, I've already done it. I already had the factor calculated it was just a matter of applying it to two more numbers.

## Ex. 5 Deliberative Process (DP)

Jen

**From:** Rossmeisl, Colleen  
**Sent:** Friday, May 17, 2019 1:05 PM  
**To:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Subject:** RE: Overlap tables follow-up

Hey Jen –

One other thought – **Ex. 5 Deliberative Process (DP)**

## Ex. 5 Deliberative Process (DP)

**From:** Connolly, Jennifer  
**Sent:** Thursday, May 16, 2019 11:30 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** Overlap tables follow-up

Hey Colleen,

I looked into a couple of the questions you add. Yes I think I can generate a Non-AA an AA aggregated PCT.

Ex. 5 Deliberative Process (DP)

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Jen

\*\*\*\*\*

Jennifer Connolly, GIS Biologist  
Environmental Information Support Branch  
Environmental Fate and Effects Division  
Office of Pesticide Programs, U.S. EPA  
1200 Pennsylvania Avenue, NW (7507P)  
Washington, DC 20460  
phone: (703) 347-0405  
fax: (703) 305-0619  
e-mail: connolly.jennifer@epa.gov

\*\*\*\*\*

Message

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**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 3/6/2019 4:09:17 PM  
**To:** Anderson, Brian [Anderson.Brian@epa.gov]  
**Subject:** RE: draft updated table/deadlines for revised methods

Hi Brian –

I took the contents of this table and points below it and put in a document on the SharePoint site \*called it “Timeline for Response to Comments\_v2” – only because I kept having to search for this email again when thinking about timelines!

## Ex. 5 Deliberative Process (DP)

Just a thought...

Thanks!

Colleen

---

**From:** Anderson, Brian  
**Sent:** Tuesday, February 26, 2019 11:52 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>  
**Subject:** draft updated table/deadlines for revised methods

Hi Team,

This is what I’m thinking regarding the schedule right now. I’m assuming that I won’t have many comments on my review b/c I plan to stay as engaged as possible and check in and such (Send in the micromanagers! 😊 – Lego movie reference). So I used that date to kind of kick off the revised document stage, although revisions can start occurring for some sections anytime.

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Issues to Raise So Far from FWS  
Comments on Usage Data:

## Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Were there others?

---

**From:** Rossmeisl, Colleen

**Sent:** Tuesday, February 26, 2019 11:40 AM

**To:** Anderson, Brian <[Anderson.Brian@epa.gov](mailto:Anderson.Brian@epa.gov)>; Garber, Kristina <[Garber.Kristina@epa.gov](mailto:Garber.Kristina@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Donovan, Elizabeth <[Donovan.Elizabeth@epa.gov](mailto:Donovan.Elizabeth@epa.gov)>

**Subject:** RE: ESA RTC interim methods

Hi all –

Brian can't make this meeting now. If we think we know what we are doing, we could just use the hour to work on comments instead of meeting to talk.

However, I am happy to keep it on your calendars if you want to keep someone else from stealing your time. :-)

Let me know if folks still want to meet.

Thanks!

Colleen

Message

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**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 1/30/2018 8:49:58 PM  
**To:** Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** FW: BE streamline method development

Thought you might like to read this follow up – she has good points. (And I don't think she would mind me sharing with you)

---

**From:** Connolly, Jennifer  
**Sent:** Tuesday, January 30, 2018 1:08 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: BE streamline method development

Sounds good.

# Ex. 5 Deliberative Process (DP)

Jen

---

**From:** Rossmeisl, Colleen  
**Sent:** Tuesday, January 30, 2018 12:23 PM  
**To:** Connolly, Jennifer <Connolly.Jennifer@epa.gov>  
**Subject:** RE: BE streamline method development

Sorry Jen – I just got this email. I have been running from one meeting to another! I should have gone with Skype I suppose.



I am going to write up the proposals from today and will run them by you first as it is probably useful to get your two cents on what you think is most reasonable path forward first.

---

**From:** Connolly, Jennifer  
**Sent:** Tuesday, January 30, 2018 10:23 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: BE streamline method development

Skype is a little easier for me but I don't mind the call in if that works better in the room.

## Ex. 5 Deliberative Process (DP)

---

**From:** Rossmeisl, Colleen  
**Sent:** Tuesday, January 30, 2018 9:24 AM  
**To:** Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>  
**Subject:** RE: BE streamline method development

## Ex. 6 Personal Privacy (PP)

Are you still thinking our quantitative/qualitative method for scaling drift is a potential? I was going to bring it up (e.g. is PCT is <25% we scale drift by 0.5, if PCT >75%, we don't scale at all...)

---

**From:** Connolly, Jennifer  
**Sent:** Tuesday, January 30, 2018 9:22 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: BE streamline method development

Hey Colleen,

I'm going to try to call in to this today. I'll use the number on the invite but wanted to let you know.

## Ex. 6 Personal Privacy (PP)

-----Original Appointment-----

**From:** Rossmeisl, Colleen  
**Sent:** Monday, January 29, 2018 10:34 AM  
**To:** Garber, Kristina; Panger, Melissa; Peck, Charles; Lennartz, Steven; Connolly, Jennifer; Blankinship, Amy; Donovan, Elizabeth; Eckel, William; Odenkirchen, Edward; Kanarek, Andrew; White, Katrina; Harwood, Douglas; Wendel, Christina

**Subject:** BE streamline method development

**When:** Tuesday, January 30, 2018 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** DCRoomPYS10771/Potomac-Yard-One

Agenda:

- Timeline and milestones (I went through Gantt chart, I will send a draft of proposed interim dates given the shortened deadline prior to meeting)
  - o discuss decision points, tasks needed to complete in order to meet milestones
- Running list of discussion items (we will not cover all these at one meeting, but will continue to work through this list, and other items, at other ESA meetings)
  - o method for applying usage data to drift
  - o method for applying usage data to aquatics

## Ex. 5 Deliberative Process (DP)

\*\*\*\*\*

Tentative placeholder for ESA weekly meetings. Wanted to get placeholder on folks calendars, but time could change. Not sure what will happen the first two weeks with the move and then will need to find a new room(!) but still thought should get something scheduled.

Thanks!

Colleen

Conf  
Conf Ex. 6 Personal Privacy (PP)  
Partic

Message

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**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 2/7/2018 5:58:03 PM  
**To:** Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** RE: I didn't get your slides for ESA drift...

**Ex. 5 Deliberative Process (DP)**

---

**From:** Peck, Charles  
**Sent:** Wednesday, February 07, 2018 12:57 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: I didn't get your slides for ESA drift...

**Ex. 5 Deliberative Process (DP)**

---

**From:** Rossmeisl, Colleen  
**Sent:** Wednesday, February 07, 2018 12:56 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: I didn't get your slides for ESA drift...

**Ex. 5 Deliberative Process (DP)**

---

**From:** Peck, Charles  
**Sent:** Wednesday, February 07, 2018 12:54 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: I didn't get your slides for ESA drift...

**Ex. 5 Deliberative Process (DP)**

---

**From:** Rossmeisl, Colleen  
**Sent:** Wednesday, February 07, 2018 12:52 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: I didn't get your slides for ESA drift...

**Ex. 5 Deliberative Process (DP)**

---

**From:** Peck, Charles  
**Sent:** Wednesday, February 07, 2018 12:51 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: I didn't get your slides for ESA drift...

**Ex. 5 Deliberative Process (DP)**

---

**From:** Rossmeisl, Colleen  
**Sent:** Wednesday, February 07, 2018 12:50 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: I didn't get your slides for ESA drift...

# Ex. 5 Deliberative Process (DP)

**From:** Peck, Charles  
**Sent:** Wednesday, February 07, 2018 12:50 PM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: I didn't get your slides for ESA drift...

## Ex. 5 Deliberative Process (DP)

**From:** Rossmeisl, Colleen  
**Sent:** Wednesday, February 07, 2018 12:49 PM  
**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Subject:** RE: I didn't get your slides for ESA drift...

## Ex. 5 Deliberative Process (DP)

**From:** Peck, Charles  
**Sent:** Wednesday, February 07, 2018 12:46 PM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: I didn't get your slides for ESA drift...

# Ex. 5 Deliberative Process (DP)

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 12314  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

**From:** Rossmeisl, Colleen  
**Sent:** Wednesday, February 07, 2018 12:41 PM  
**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Subject:** RE: I didn't get your slides for ESA drift...

## Ex. 5 Deliberative Process (DP)

**From:** Peck, Charles  
**Sent:** Wednesday, February 07, 2018 12:39 PM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** I didn't get your slides for ESA drift...

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA

Room 12314  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

Message

---

**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 10/3/2017 3:21:51 PM  
**To:** Eckel, William [Eckel.William@epa.gov]  
**Subject:** RE: BE Streamline method development details - 9/26/2017

Thanks Bill! I may add them in as their own line subtask or maybe we can talk in meeting about where they will fit best (and where they would be timed the best).

---

**From:** Eckel, William  
**Sent:** Tuesday, October 03, 2017 11:16 AM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: BE Streamline method development details - 9/26/2017

Colleen:

I am particularly interested in Federal lands, NEPA review and EISs for Federal agency use of pesticides, and public land uses in general. This includes integrating BiOps completed by other Federal agencies into out work. Also for mosquitocide uses, the role of states in deciding to spray and their interaction with local/regional Services offices; this falls under the heading of state-lead consultations.

Bill

---

**From:** Rossmeisl, Colleen  
**Sent:** Tuesday, October 03, 2017 9:54 AM  
**To:** Garber, Kristina <Garber.Kristina@epa.gov>  
**Cc:** Panger, Melissa <Panger.Melissa@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Lennartz, Steven <Lennartz.Steven@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Blankinship, Amy <Blankinship.Amy@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Eckel, William <Eckel.William@epa.gov>; Odenkirchen, Edward <Odenkirchen.Edward@epa.gov>; Kanarek, Andrew <Kanarek.Andrew@epa.gov>  
**Subject:** RE: BE Streamline method development details - 9/26/2017

Thanks for feedback so far! I will update Gantt with what folks have indicated...

In the marathon meeting today (who's bringing snacks??), I am hoping we can go through each subtask and see if we need to add any detail or scope to tasks (these are listed at the bottom of this email). If folks are able to think through the tasks a little bit before the meeting and maybe think about the time/bodies required to complete the tasks, that may be helpful for scoping/planning. We can look at the Gantt chart to see if we think enough time is allotted and maybe set some milestones. Also think about your own availability with other work you have going on and any other folks that you think should be pulled in.

Jen also has some additional questions that would be helpful to cover in this meeting (we need to make decisions for her to continue to move forward):

## Ex. 5 Deliberative Process (DP)

48

## Ex. 5 Deliberative Process (DP)

She can provide more detail at the meeting. We can take care of these right in the beginning if we want or wait until the end.

Thanks!  
Colleen

---

**From:** Garber, Kristina  
**Sent:** Tuesday, October 03, 2017 9:15 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Cc:** Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>; Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>; Lennartz, Steven <[Lennartz.Steven@epa.gov](mailto:Lennartz.Steven@epa.gov)>; Connolly, Jennifer <[Connolly.Jennifer@epa.gov](mailto:Connolly.Jennifer@epa.gov)>; Blankinship, Amy <[Blankinship.Amy@epa.gov](mailto:Blankinship.Amy@epa.gov)>; Donovan, Elizabeth <[Donovan.Elizabeth@epa.gov](mailto:Donovan.Elizabeth@epa.gov)>; Eckel, William <[Eckel.William@epa.gov](mailto:Eckel.William@epa.gov)>; Odenkirchen, Edward <[Odenkirchen.Edward@epa.gov](mailto:Odenkirchen.Edward@epa.gov)>; Kanarek, Andrew <[Kanarek.Andrew@epa.gov](mailto:Kanarek.Andrew@epa.gov)>  
**Subject:** Re: BE Streamline method development details - 9/26/2017

I would like to be involved in the usage work. I am willing to take the lead, since I worked on the diazinon usage effort.

You can also put me down for the step 3 related tasks and I can provide support on the probabilistic modeling methods.

On Sep 27, 2017, at 8:01 AM, Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)> wrote:

Hi all –

Below are my summary notes from the meeting yesterday. At the bottom are the “groups” we see forming based on tasks that need to be accomplished. If folks want to speak up about which tasks they want to work on/be lead on (or if willing to work wherever it is needed), please chime in. I previously put some names in the Gantt chart (attached) under tasks, but that was just a guess.

Next week I thought we could go through the groups and get general agreement on paths and who is doing what so we can get rolling on some of these parallel tasks. Then go through more tool/method development details as time allows.

I am also attaching the rough outline on spatial analyses we were working off of yesterday – I tried to update with items discussed.

Please let me know if I missed anything or if there are different suggestions for next week.

Thanks!  
Colleen

### BE Streamline method development details - 9/26/2017

Wednesday, September 27, 2017  
6:46 AM

**Meeting Date:** 9/26/2017 3:00 PM

**Location:** DCRoomPYS12771/Potomac-Yard-One

**Link to Outlook Item:** [click here](#)

**Invitation Message**

**Participants**

<image001.png> [Rossmeisl, Colleen](#) (Meeting Organizer)  
<image001.png> [Garber, Kristina](#) (Accepted in Outlook)  
<image001.png> [Panger, Melissa](#) (Accepted in Outlook)  
<image001.png> [Peck, Charles](#) (Accepted in Outlook)  
<image001.png> [Lennartz, Steven](#)  
<image001.png> [Connolly, Jennifer](#) (Accepted in Outlook)  
<image001.png> [Blankinship, Amy](#)  
<image001.png> [Donovan, Elizabeth](#) (Accepted in Outlook)  
<image001.png> [Eckel, William](#) (Accepted in Outlook)  
<image001.png> [Odenkirchen, Edward](#)  
<image001.png> [Kanarek, Andrew](#)

**Notes**

# Ex. 5 Deliberative Process (DP)



# **Ex. 5 Deliberative Process (DP)**

Created with Microsoft OneNote 2016.

<Overlap approach summary\_brief.docx>

<ESA BERT Gantt timeline\_9\_11\_17.xlsx>

Message

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**From:** Rossmeisl, Colleen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6B18311C740A4535907E690ACA5F5924-ROSSMEISL,]  
**Sent:** 5/15/2020 8:23:45 PM  
**To:** Peck, Charles [Peck.Charles@epa.gov]  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

---

**From:** Peck, Charles <Peck.Charles@epa.gov>  
**Sent:** Friday, May 15, 2020 4:16 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

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**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Friday, May 15, 2020 3:37 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

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**From:** Peck, Charles <Peck.Charles@epa.gov>  
**Sent:** Friday, May 15, 2020 3:03 PM  
**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

---

**From:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>  
**Sent:** Friday, May 15, 2020 3:01 PM  
**To:** Peck, Charles <Peck.Charles@epa.gov>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

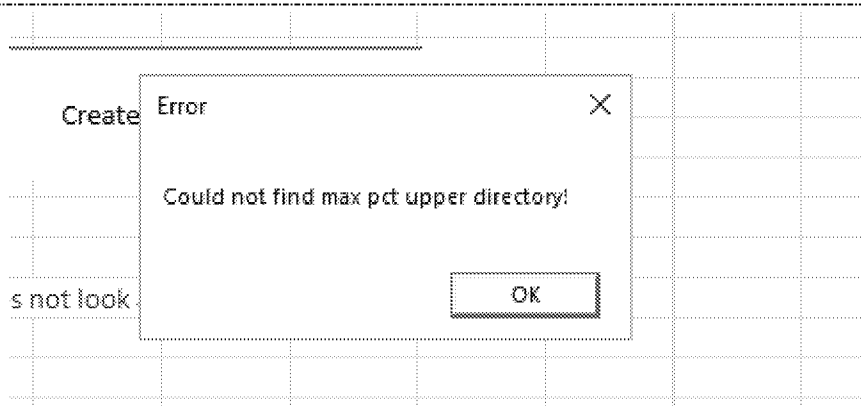
**From:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Sent:** Friday, May 15, 2020 2:39 PM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 10244  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

**From:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Sent:** Friday, May 15, 2020 2:29 PM  
**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)



here is my file structure:

# Ex. 5 Deliberative Process (DP)

---

**From:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Sent:** Friday, May 15, 2020 2:16 PM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

---

**From:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Sent:** Friday, May 15, 2020 2:13 PM  
**To:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Subject:** RE: Proposed Alpha Version, PWC Postprocessor

## Ex. 5 Deliberative Process (DP)

---

**From:** Peck, Charles <[Peck.Charles@epa.gov](mailto:Peck.Charles@epa.gov)>  
**Sent:** Friday, May 15, 2020 11:53 AM  
**To:** Rossmeisl, Colleen <[Rossmeisl.Colleen@epa.gov](mailto:Rossmeisl.Colleen@epa.gov)>  
**Subject:** Proposed Alpha Version, PWC Postprocessor

Hi Colleen,

# Ex. 5 Deliberative Process (DP)

Chuck Peck  
OPP/EFED/ERB VI  
Potomac Yard South  
Crystal City, VA  
Room 10244  
(703) 347-8064  
[peck.charles@epa.gov](mailto:peck.charles@epa.gov)

Message

---

**From:** Paisley-Jones, Claire [paisley-jones.claire@epa.gov]  
**Sent:** 3/7/2019 9:41:54 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** Conversation with Paisley-Jones, Claire

Paisley-Jones, Claire 11:06 AM:

look at page 80

Paisley-Jones, Claire 11:06 AM:

file:///C:/Users/CPaisley/OneDrive%20-%20Environmental%20Protection%20Agency%20(EPA)/desktop%202018/\_MovedData/projects/ESA/rangeland-grasshopper-mormon-cricket-draft-eis.pdf

Paisley-Jones, Claire 11:06 AM:

i think that's with all insecticides

Paisley-Jones, Claire 11:06 AM:

but still bounding

Paisley-Jones, Claire 11:06 AM:

garland is looking into it further

Paisley-Jones, Claire 11:38 AM:

there are 84 labels with pasture, rangeland, or forest registrations...

Paisley-Jones, Claire 11:39 AM:

sorry, only 83 ;)

Paisley-Jones, Claire 11:43 AM:

which is more than the number of currently registered labels... damnit OPPIN

Sims, Diann 11:44 AM:

Aren't you sorry you looked?

Paisley-Jones, Claire 11:44 AM:

haha not yet

Paisley-Jones, Claire 11:45 AM:

i had a conversation with garland and it sounds like we can probably get something from them

Paisley-Jones, Claire 11:45 AM:

turns out there is a database and she's getting access

Paisley-Jones, Claire 11:45 AM:

shes' going to talk to OPMP first to make sure it's ok to share (which makes total sense)

Paisley-Jones, Claire 11:46 AM:

but i think there's some useful info (probably) in the document i sent you

Paisley-Jones, Claire 2:46 PM:

are you planning to come to this meeting at 3?

Paisley-Jones, Claire 2:46 PM:

we're going to talk about the census stuff more

Sims, Diann 2:47 PM:

If I finish up in time; I have a fire drill on my hands.

Paisley-Jones, Claire 2:47 PM:

ok

Paisley-Jones, Claire 2:48 PM:

well we're scheduled until 430

Sims, Diann 2:48 PM:

I think Mark may be swinging the conversation back to the surrogate method at this meeting. So be flexible. I'll try to stop in when I'm done.

Paisley-Jones, Claire 2:48 PM:

i will be flexible :)

Paisley-Jones, Claire 2:49 PM:

i just want to be able to compare it to another data set if we're going to use it as a surrogate

Paisley-Jones, Claire 2:56 PM:

shoot, remind me how i was supposed to phrase the question about the difference between the pct from the census and what's in kynetec for cotton and tobacco

Paisley-Jones, Claire 2:57 PM:

not that i'm concerned that the data aren't comparable....

Sims, Diann 2:57 PM:

Just make a question. I'm wondering if.....

Paisley-Jones, Claire 2:57 PM:

ok

Sims, Diann 2:57 PM:

I noticed that.....and I'm wondering if.....

Paisley-Jones, Claire 2:58 PM:

i'll get it eventually ;)

Paisley-Jones, Claire 2:58 PM:

i'm trying :)

Paisley-Jones, Claire 4:25 PM:

holy moly! i think we did it!

Paisley-Jones, Claire 4:25 PM:

and also he didn't mention the census so neither did I, you'd be so proud!!!

Sims, Diann 4:26 PM:

Awwwwwww, look at that!!!

Sims, Diann 4:26 PM:

What made the difference?

Paisley-Jones, Claire 4:27 PM:

he just didn't mention it

Paisley-Jones, Claire 4:27 PM:

he suggested that we calculate the UDL pct ourselves with the crops we do have, and just tell them to use that

Paisley-Jones, Claire 4:27 PM:

for the whole udl

Paisley-Jones, Claire 4:28 PM:

and i suggested that we do that and tell them to use it as a surrogate for the non-surveyed crops instead (which wouldn't really change the overall pct, but looks more like we're giving them what they asked for)

Paisley-Jones, Claire 4:28 PM:

and it sounds like we can all agree on that

Sims, Diann 4:29 PM:

Awesome. Now to see it realized.....

Paisley-Jones, Claire 4:29 PM:

haha yep



Message

---

**From:** Paisley-Jones, Claire [paisley-jones.claire@epa.gov]  
**Sent:** 3/7/2019 8:02:23 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** Conversation with Paisley-Jones, Claire

Paisley-Jones, Claire 11:06 AM:

look at page 80

Paisley-Jones, Claire 11:06 AM:

file:///C:/Users/CPaisley/OneDrive%20-%20Environmental%20Protection%20Agency%20(EPA)/desktop%202018/\_MovedData/projects/ESA/rangeland-grasshopper-mormon-cricket-draft-eis.pdf

Paisley-Jones, Claire 11:06 AM:

i think that's with all insecticides

Paisley-Jones, Claire 11:06 AM:

but still bounding

Paisley-Jones, Claire 11:06 AM:

garland is looking into it further

Paisley-Jones, Claire 11:38 AM:

there are 84 labels with pasture, rangeland, or forest registrations...

Paisley-Jones, Claire 11:39 AM:

sorry, only 83 ;)

Paisley-Jones, Claire 11:43 AM:

which is more than the number of currently registered labels... damnit OPPIN

Sims, Diann 11:44 AM:

Aren't you sorry you looked?

Paisley-Jones, Claire 11:44 AM:

haha not yet

Paisley-Jones, Claire 11:45 AM:

i had a conversation with garland and it sounds like we can probably get something from them

Paisley-Jones, Claire 11:45 AM:

turns out there is a database and she's getting access

Paisley-Jones, Claire 11:45 AM:

shes' going to talk to OPMP first to make sure it's ok to share (which makes total sense)

Paisley-Jones, Claire 11:46 AM:

but i think there's some useful info (probably) in the document i sent you

Paisley-Jones, Claire 2:46 PM:

are you planning to come to this meeting at 3?

Paisley-Jones, Claire 2:46 PM:

we're going to talk about the census stuff more

Sims, Diann 2:47 PM:

If I finish up in time; I have a fire drill on my hands.

Paisley-Jones, Claire 2:47 PM:

ok

Paisley-Jones, Claire 2:48 PM:

well we're scheduled until 430

Sims, Diann 2:48 PM:

I think Mark may be swinging the conversation back to the surrogate method at this meeting. So be flexible. I'll try to stop in when I'm done.

Paisley-Jones, Claire 2:48 PM:

i will be flexible :)

Paisley-Jones, Claire 2:49 PM:

i just want to be able to compare it to another data set if we're going to use it as a surrogate

Paisley-Jones, Claire 2:56 PM:

shoot, remind me how i was supposed to phrase the question about the difference between the pct from the census and what's in kynetec for cotton and tobacco

Paisley-Jones, Claire 2:57 PM:

not that i'm concerned that the data aren't comparable....

Sims, Diann 2:57 PM:

Just make a question. I'm wondering if.....

Paisley-Jones, Claire 2:57 PM:

ok

Sims, Diann 2:57 PM:

I noticed that.....and I'm wondering if.....

Paisley-Jones, Claire 2:58 PM:

i'll get it eventually ;)

Paisley-Jones, Claire 2:58 PM:

i'm trying :)

Message

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**From:** Paisley-Jones, Claire [paisley-jones.claire@epa.gov]  
**Sent:** 2/6/2018 6:32:52 PM  
**To:** Paisley-Jones, Claire [Paisley-Jones.Claire@epa.gov]; Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** Conversation with Paisley-Jones, Claire

Paisley-Jones, Claire 1:10 PM:

so apparently there's an EFED meeting about ESA usage data on thursday... is that on your calendar?

Paisley-Jones, Claire 1:11 PM:

it isn't on my calendar

Sims, Diann 1:12 PM:

There is. It is a meeting with USDA. I have a meeting with Brian later this afternoon. I am attending, but I believe that this is more a listening session and to try to get us on the same page about the usage data.

Paisley-Jones, Claire 1:14 PM:

OK, i just wanted to make sure we were included :)

Paisley-Jones, Claire 1:15 PM:

if you'd like me to come I can, it might be useful to hear what they have to say

Sims, Diann 1:15 PM:

Yes, we are included.....and then some

Sims, Diann 1:15 PM:

I'll feel Brian out about it this afternoon

Paisley-Jones, Claire 1:16 PM:

sounds good :)

Paisley-Jones, Claire 1:17 PM:

I didn't get a reply about the PCT definition. Can you also see if he got what he needed on that (if you think of it)

Sims, Diann 1:17 PM:

OK. I'll make a note of it.

Paisley-Jones, Claire 1:19 PM:

thanks!

Paisley-Jones, Claire 1:19 PM:

ooh! what's this follow up meeting at 2 for?

Paisley-Jones, Claire 1:20 PM:

i don't know what else to say about the UU choices... it didn't look like there was any more/new info in the invite

Sims, Diann 1:21 PM:

I don't know. Jonathan suggested a follow up meeting on the topic and Tim added it to today's agenda.

Paisley-Jones, Claire 1:22 PM:

hahaha ok. I'll just come and listen then :)

Sims, Diann 1:23 PM:

Hmmm, you want to be sure that the "projects" don't end up in your lap. That can happen when you're absent and your boss is not paying attention. :)

Paisley-Jones, Claire 1:24 PM:

i'll be vigilant! ;)

Message

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**From:** Atwood, Donald [Atwood.Donald@epa.gov]  
**Sent:** 11/13/2017 1:17:19 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** FW: Methomyl - new SLUA clarification

FYI

Don Atwood, Ph.D. - Entomologist  
US Environmental Protection Agency  
Office of Chemical Safety & Pollution Prevention  
Office of Pesticide Programs  
Biological and Economic Analysis Division  
Science Information and Analysis Branch

(703) 308-8088  
atwood.donald@epa.gov

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**From:** Wendel, Christina  
**Sent:** Tuesday, November 07, 2017 5:04 PM  
**To:** Mallampalli, Nikhil <Mallampalli.Nikhil@epa.gov>  
**Cc:** Atwood, Donald <Atwood.Donald@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>; Berwald, Derek <Berwald.Derek@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Paisley-Jones, Claire <Paisley-Jones.Claire@epa.gov>  
**Subject:** RE: Methomyl - new SLUA clarification

Hi Nikhil,

Thanks for the heads up, and passing along the information. The ESA schedule is a bit tentative at the moment, but based on best available information – it is Aug. 2018 for the final draft. However, that could change based on direction from upper management, but until we hear otherwise that is our plan, to finish before the end of FY18.

I am not sure of how the overlap with BEAD and the FIFRA (DWA) and ESA team with regards to the usage information collection is working. But I would imagine some of what was collected for the DWA for Jim – would be useful in the materials that are being pulled together/revised for the ESA usage information. Only the ESA is all uses, whereas it appears the DWA focused in on some. You have only worked on the DWA portion – I've only been involved on the ESA side of things as the biologist. Jim is now working on the ESA as our fate scientist, but any information you have could be helpful. But I also don't want to take away from or confuse anything that Don and the ESA group are pulling together for the usage project that they are working on.

But I would be sure that whatever you have to share and include so it can all be incorporated to the overall usage profile for methomyl as we develop the process.

Thanks again for the help and information.  
Christina

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**From:** Mallampalli, Nikhil  
**Sent:** Tuesday, November 07, 2017 3:28 PM  
**To:** Wendel, Christina <Wendel.Christina@epa.gov>  
**Cc:** Atwood, Donald <Atwood.Donald@epa.gov>; Becker, Jonathan <Becker.Jonathan@epa.gov>; Berwald, Derek <Berwald.Derek@epa.gov>  
**Subject:** RE: Methomyl - new SLUA clarification

Hi Christina –

Steve Jarboe sent me a copy of his reply to your question, so I hope that issue is resolved. I do have a question for you – what's the schedule for the ESA work on methomyl? I've been involved in the team discussions on supporting EFED's drinking water risk assessments which I know are due out in December, but no one has discussed the ESA angle yet.

Don and I have developed some info on things like the first application timing and average number of apps/year for specific water modeling scenarios (involving just onions, lettuce, and sweet corn, since they are among the highest use crops in terms of average PCT), for Jim Lin and his group. Would you like to look at what we have so far?

All the best - Nikhil

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**From:** Wendel, Christina

**Sent:** Tuesday, November 07, 2017 11:52 AM

**To:** Reighart, Andrew <[Reighart.Andrew@epa.gov](mailto:Reighart.Andrew@epa.gov)>; Becker, Jonathan <[Becker.Jonathan@epa.gov](mailto:Becker.Jonathan@epa.gov)>; Sells, Dexter <[Sells.Dexter@epa.gov](mailto:Sells.Dexter@epa.gov)>; Berwald, Derek <[Berwald.Derek@epa.gov](mailto:Berwald.Derek@epa.gov)>; Mallampalli, Nikhil <[Mallampalli.Nikhil@epa.gov](mailto:Mallampalli.Nikhil@epa.gov)>

**Cc:** Manupella, Matthew <[Manupella.Matthew@epa.gov](mailto:Manupella.Matthew@epa.gov)>; Nguyen, Khue <[Nguyen.Khue@epa.gov](mailto:Nguyen.Khue@epa.gov)>; Villanueva, Philip <[Villanueva.Philip@epa.gov](mailto:Villanueva.Philip@epa.gov)>; Lin, James <[lin.james@epa.gov](mailto:lin.james@epa.gov)>; Panger, Melissa <[Panger.Melissa@epa.gov](mailto:Panger.Melissa@epa.gov)>

**Subject:** RE: Methomyl - new SLUA clarification

Hi all,

EFED is in the process of updating the methomyl Endangered Species risk assessment document, and in going over the 2017 SLUA memo, I came across something that I believe we are in need of clarification. In the comparison table in the 2017 SLUA memo (attached), it indicates that the previous reporting period was 2004-2014; however, in the SLUA report that we have from 2016 (dated 4/19/16; Appendix 1-8, see attached), it reports that the reporting period was 2005-2014, and not 2004-2014.... Based on this difference, I am not sure if there is a disconnect, or if there is data that was missing, or if there is indeed an error. Therefore, I am not sure if this results in any difference for any of the crops that are reported in the difference table in the new 2017 memo, versus the 2016 memo.

Any clarification regarding the difference between the two SLUA's would be greatly appreciated, as we move forward with our assessment.

Thank you,  
Christina Wendel

Message

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**From:** Suarez, Mark [Suarez.Mark@epa.gov]  
**Sent:** 3/13/2019 7:30:17 PM  
**To:** Sims, Diann [Sims.Diann@epa.gov]  
**Subject:** RE: ESA meeting this afternoon

Hmm. I thought that I was clear, but I suppose most miscommunications occur despite both parties thinking that they were clear...

I will get back to her today.

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**From:** Sims, Diann  
**Sent:** Wednesday, March 13, 2019 3:27 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: ESA meeting this afternoon

I see. While I'm not sure what message was rec'd, as long as you get back this afternoon, they should be ok.

---

**From:** Suarez, Mark  
**Sent:** Wednesday, March 13, 2019 3:25 PM  
**To:** Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: ESA meeting this afternoon

## Ex. 5 Deliberative Process (DP)

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**From:** Sims, Diann  
**Sent:** Wednesday, March 13, 2019 3:19 PM  
**To:** Suarez, Mark <Suarez.Mark@epa.gov>  
**Subject:** RE: ESA meeting this afternoon

I'm in a meeting now and Kris is under the impression that she waiting from something from you.

---

**From:** Suarez, Mark  
**Sent:** Wednesday, March 13, 2019 9:49 AM  
**To:** Sims, Diann <Sims.Diann@epa.gov>  
**Subject:** RE: ESA meeting this afternoon

Yes.  
Perhaps they are referring to the fact that I told Kris that I would get back to her on some additional analysis, which I have nearly completed. I was going to share it in our internal ESA meeting this afternoon.  
I'll let them know that the language that they have is still valid. The additional analysis that I have done supports the statement.

---

**From:** Sims, Diann  
**Sent:** Wednesday, March 13, 2019 9:42 AM

**To:** Suarez, Mark <Suarez.Mark@epa.gov>

**Subject:** FW: ESA meeting this afternoon

Good Morning,

Didn't we send our input on the SAP narrative?

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**From:** Rossmeisl, Colleen

**Sent:** Wednesday, March 13, 2019 9:26 AM

**To:** Garber, Kristina <Garber.Kristina@epa.gov>; Anderson, Brian <Anderson.Brian@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>; Perry, Tracy <Perry.Tracy@epa.gov>

**Subject:** RE: ESA meeting this afternoon

That sounds reasonable to me. Kris, regarding the "To do" list, incorporation of comments from Dyner was on there for everyone. I was just in the document and saw that you had added some. Have you added all of his comments or do folks need to look at his comments for anything relevant to their own sections? Seems like that is the only thing left to do other than BEAD input on SAP and final read through by Brian after we meet with Marietta.

---

**From:** Garber, Kristina

**Sent:** Wednesday, March 13, 2019 9:05 AM

**To:** Anderson, Brian <Anderson.Brian@epa.gov>; Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>; Perry, Tracy <Perry.Tracy@epa.gov>

**Subject:** RE: ESA meeting this afternoon

Sounds good. I think that we should go through Marietta's comments where the team provided responses but did not change the responses. We can probably project the RTC doc during the meeting. Thoughts?

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**From:** Anderson, Brian

**Sent:** Wednesday, March 13, 2019 8:59 AM

**To:** Rossmeisl, Colleen <Rossmeisl.Colleen@epa.gov>; Garber, Kristina <Garber.Kristina@epa.gov>; Panger, Melissa <Panger.Melissa@epa.gov>; Donovan, Elizabeth <Donovan.Elizabeth@epa.gov>; Peck, Charles <Peck.Charles@epa.gov>; Connolly, Jennifer <Connolly.Jennifer@epa.gov>; Sims, Diann <Sims.Diann@epa.gov>; Perry, Tracy <Perry.Tracy@epa.gov>

**Subject:** ESA meeting this afternoon

The purpose of the 3:00 meeting today is to check in with Marietta on the status and progress of the RTC and revised methods document – and just to make sure we are communicating and that we are all on the same page.

Brian